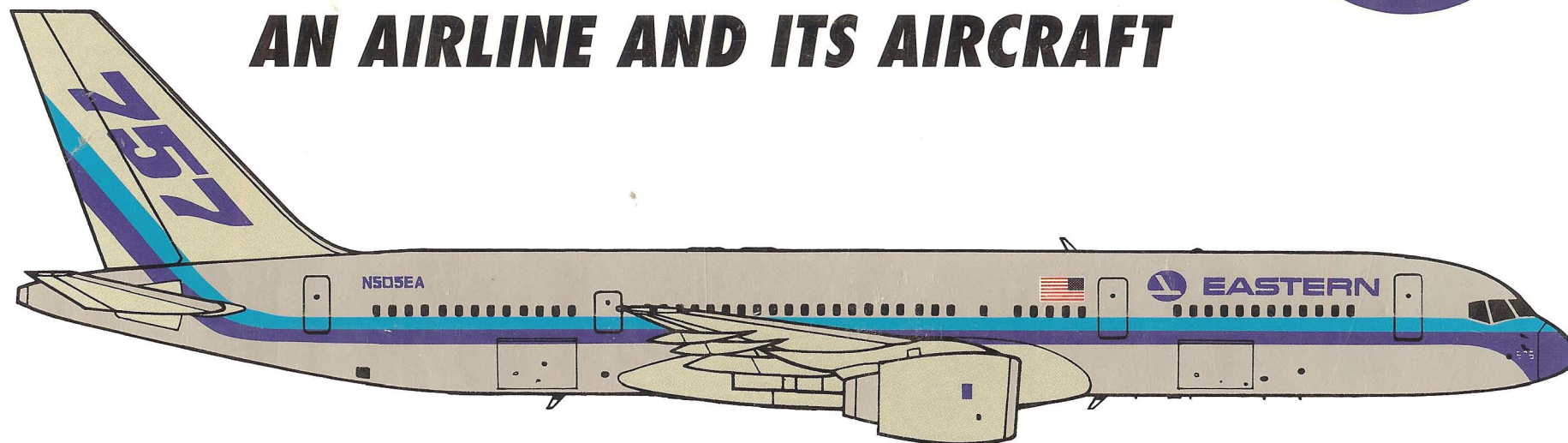


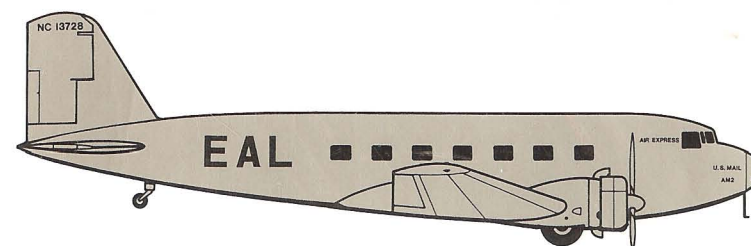
# EASTERN



## ***AN AIRLINE AND ITS AIRCRAFT***



*FROM THE GREAT SILVER  
FLEET TO THE SHUTTLE*



by R.E.G. Davies ■ Illustrated by Mike Machat



**EASTERN**



***AN AIRLINE AND ITS AIRCRAFT***



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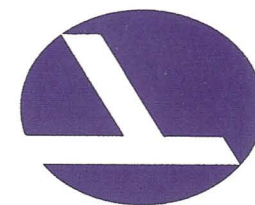
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# EASTERN



## ***AN AIRLINE AND ITS AIRCRAFT***

*by R.E.G. Davies*

*Illustrated by Mike Machat*



Paladwr Press

World Transport '04

*This book is dedicated to all those Eastern Air Lines employees who, despite the suffering caused by the often-adversarial relationship between the work force and management during the last years, maintained such a high degree of camaraderie that retiree organizations, such as EARA, REPA, and the Silverliners, continue to thrive at the time of this publication.*

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*Shades of Yesteryear: An Eastern Air Transport Pitcairn Mailwing open-cockpit biplane on the ramp at Floyd Bennett Field, New York, in 1934. The mail van is in attendance, but no security was needed.*



# Preface and Introduction

## Author

Thanks to the Eastern Airlines Retirees Association, and the Estate of Eastern Air Lines, which provided encouragement and support, Paladwr Press has been able to add another volume to its list of Great Airlines of the World. (Coincidentally, earlier this year, in the summer of 2002, we did the same in our library series, with *Poor Sailors' Airline*, Gary Kissel's personal account of the history of P.S.A.)

I was reminded of the glorious days of the Great Silver Fleet, when Eastern dominated the eastern skies of the United States; of the almost mass exodus of New Yorkers to Florida during the frigid winters of the northeast; of the dramatic and revolutionary Eastern Air-Shuttle; and of the the first European Airbus to fly revenue service in the States, the harbinger of a new departure in airliner procurement patterns in North America. During the 1960s, measured in annual passenger boardings, Eastern was the largest airline in the world, and its name was as well known on the U.S. eastern seaboard as Coca Cola or Chevrolet.

What a story this has been. Its origins date back to Florida Airways, one of the earliest (and often forgotten) air mail contractors who benefitted from the epoch-making legislation of 1925-26 that established the United States airline industry. With the exception of Colonial, the smallest of the "grandfather rights" companies of 1938, Eastern never made a merger with a major airline, although it was eventually a partner in an association that might have turned it into, once again, the largest airline in the world.

But only memories remain, and the strength of the Retirees Association is a tribute to those memories, the good ones, that is—for there were many indigestible ones too. I hope that this book will help all the former Eastern staff, and others too, to remember all the good times.

*R.E.G.Davies*

## Artist

For me, Eastern Air Lines will always symbolize a momentous beginning. I have often shared with friends the story of my father's return from Miami in July 1956. I was presented with souvenirs that I still treasure today. From those vivid impressions, a nine-year-old boy began a life-long career.

First was the Certificate of Appreciation given to all the passengers aboard Eastern's gleaming new Douglas DC-7B, and was signed by none other than the legendary Captain

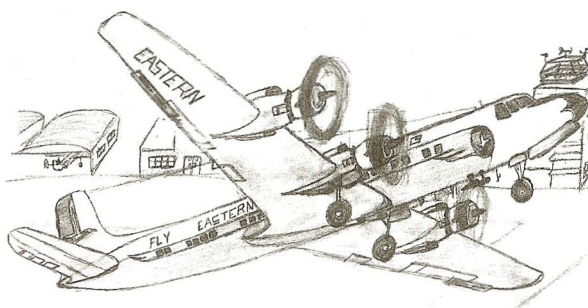
Eddie Rickenbacker. As a special touch, my Dad had the entire crew autograph the Certificate as well. Colorful Eastern baggage tags, brochures, stationery, and airline post-cards all completed the set of inflight memorabilia considered as expendable promotional material in its day, but coveted today as valuable collectibles.

The grand finale was a large, full-color lithograph of a magnificent airplane in flight over famed Miami Beach, with the modern Fontainebleau Hotel in the foreground. When I learned that it was a painting, I was mesmerized. How could anyone create something that looked so perfect? The artist was Douglas staff illustrator George Akimoto, and on learning that it was his job to create, in my young eyes, such masterpieces, my mind was made up. I would be a staff illustrator for Douglas.

By the time Eastern's first jets entered service in 1960, I was old enough to travel to New York's Idlewild Airport by myself. I would spend countless Saturdays on the observation deck of the airline's new terminal building, taking photographs and sketching the multitudes of airplanes on the tarmac. Lockheed Super-G Connies, Martin 404 Silver Falcons, new turboprop Lockheed Electras, and DC-8 jets filled the ramp, together with airliners of Aeronaves de Mexico and Mohawk, which shared the terminal and ramp.

Long years of schooling and artistic practice were rewarded with my dream job: a choice assignment in the art department of Douglas Aircraft at Long Beach, California. I came to meet George Akimoto who was then nearing retirement.

This background could have been pre-ordained. I have now worked with my friend Ron Davies - whom I also met at Long Beach—on many book projects together. My library of



*An Early "Machet" when the artist was aged nine.*

Paladwr Press airline profiles is now nearing 300 different airplane types. This book contains both my first airplane drawing, below, and the last new type I drew for Ron, the unusual Kellett autogyro. Also, one of my first efforts for Douglas is on page 89.

*Mike Machat*

## Technical Editor

Readers of Paladwr's Airlines of the World series will be familiar with some of the house-style conventions customarily adhered to. In the fleet list tabulations, for example, we use the term Manufacturer's Serial Number (MSN), not "constructor's number." The latter has fallen into common usage, but it is not strictly correct. In the tables, we have used the day-month-year styling of dates, and have invariably used a three-letter abbreviation for the month, to avoid any possible confusion.

We have tried to be consistent with manufacturers' official nomenclature for aircraft types. The Lockheed TriStar, for example, is not the Tri-Star, or Tristar, or the Tri Star, and it is also the L-1011, not the L.1011 or the L1011. The Airbuses do not have the hyphens, thus A300B4, not A300-B4, or A-300-B-4. And the commonly-seen Martin 4-0-4 is the Martin 404 on the type certificate.

In these books, the search for complete data on the operational histories of every single aircraft is arduous, even though the resources of the Airways International data bank are always thoroughly consulted. In the case of this Eastern book, we are also indebted to **Bill Hirsch**, a former Eastern stalwart, who has, by meticulous record-keeping and research, saved the editors of this book many tiring hours of hard labor. We did, however, refine his individual aircraft chronologies to include only the information that pertained to their lives with Eastern. To have included, for instance, the full DC-3 histories would have been irrelevant to this book.

Assembling the data for the earliest fleets was a problem. In the case of the early Colonial aircraft, we were able to draw on the meticulous researches of **D.M.Ives**, who, as a young boy living in Albany, New York, became entranced with the Fairchild's that flew over his home. Seventy-five years later, his acute observations now reach print.

Perhaps a final word would be to indicate that, contrary to occasional usage as Eastern Airlines, the company was always registered as Eastern Air Lines, Inc.

*John Wegg*



# Florida: Cradle of U.S. Airlines

Eastern Air Lines can trace its ancestry back to 1926, in the State of Florida, and, as discussed on page 12, can make some claim to being among the earliest of United States airlines—though this is dependent upon certain qualifications. There were other airlines before the Air Mail Act of 1925 and the Air Commerce Act of 1926 gave permanency to the air transport business, but these were of short duration, mainly because of the technical shortcomings of the equipment and the economic impossibility of flying airplanes for hire and reward.

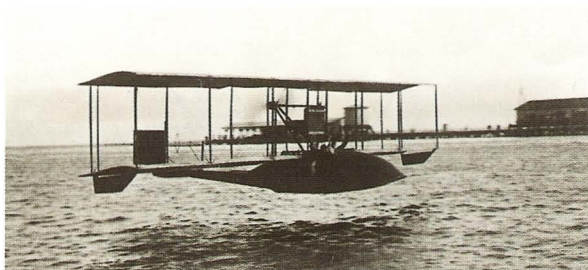
The obvious situation for those experimental gambles was on short over-water routes, preferably in areas of good weather, because the aircraft did not have much range and the flimsy machines were vulnerable. Florida was thus a favorite locale for these flights, so that Eastern's first ancestor's choice of that State was operationally sensible.

The first airline in the world started in Florida. The **St. Petersburg-Tampa Airboat Line** was founded by Percy Fansler on 4 December 1913, and started service across Tampa Bay on 1 January 1914. It lasted only three months, but carried 1,204 passengers.

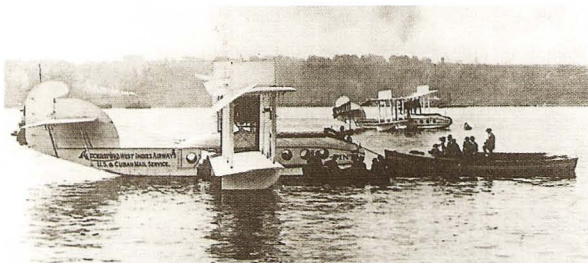
Six years later, on 15 October 1920, **Florida West Indies Airways** was issued the first air mail contract to fly mail from Key West to Havana, but it never flew, and both airline and contract were taken over by Inglis Uppercu's **Aeromarine**. With Curtiss F 5L flying boats, it started regular service from Key West to Havana and from Miami to Nassau on 1 November 1921. Until September 1923, during Prohibition, it carried several thousand passengers to attractive watering places in Cuba and the Bahamas.

Other small companies joined in the Prohibition evasion. The **America Trans-Oceanic Company** and **Aero Limited** also flew to the Bahamas alongside Aeromarine, also using Curtiss flying boats. When, therefore, Eddie Rickenbacker came south in 1926 to start **Florida Airways**, the local population had already had a taste of air transport; and the climate—meteorological and economic—for airline progress seemed to be promising.

An extract from the introductory literature for Florida Airways in 1926 is reproduced on this page. Interestingly, 75 years later, a similar route is planned for a high-speed rail project to link Florida's major cities.



*The world's first scheduled airline was the St. Petersburg-Tampa Air Boat Line, which operated a 17-mile trans-Bay service for three months, starting on 1 January 1914, with a two-seat Benoist flying boat.*



*The Curtiss Type 75 flying boats of Aeromarine West Indies Airways started passenger flights from Florida to Cuba and the Bahamas in 1920 and opened the first official U.S. foreign air mail route from Key West to Havana on 1 November 1921.*

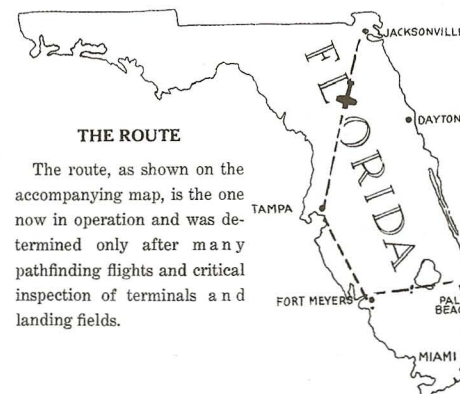


*The great Pan American Airways established its claim to a permanent air mail contract from Florida to Cuba when it chartered this Fairchild FC-2 of West Indian Aerial Express on 19 October 1927.*

TIME TABLE			
Daily Except Sunday			
South Bound		North Bound	
Lv. Jacksonville	10:00 a.m.	Lv. Miami	7:00 a.m.
Ar. Tampa	11:55 a.m.	Ar. Ft. Myers	9:05 a.m.
Lv. Tampa	12:05 p.m.	Lv. Ft. Myers	9:15 p.m.
Ar. Ft. Myers	1:10 p.m.	Ar. Tampa	10:20 a.m.
Lv. Ft. Myers	1:20 p.m.	Lv. Tampa	10:30 a.m.
Ar. Miami	3:25 p.m.	Ar. Jacksonville	12:25 p.m.

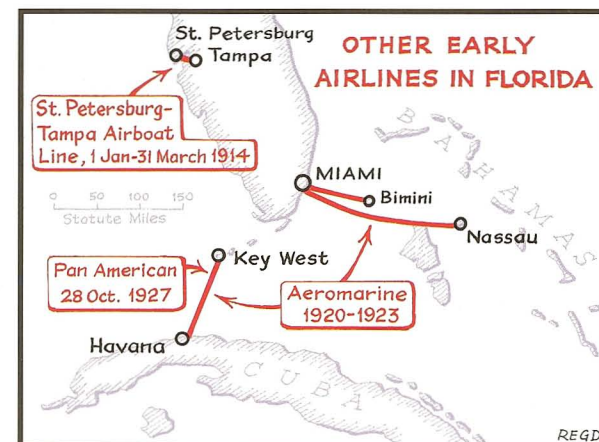
The above schedule is based on present requirements, and is subject to change if other hours for arrivals and departures will better serve Florida business men.

## Florida Wants Air Transportation



### THE ROUTE

The route, as shown on the accompanying map, is the one now in operation and was determined only after many pathfinding flights and critical inspection of terminals and landing fields.





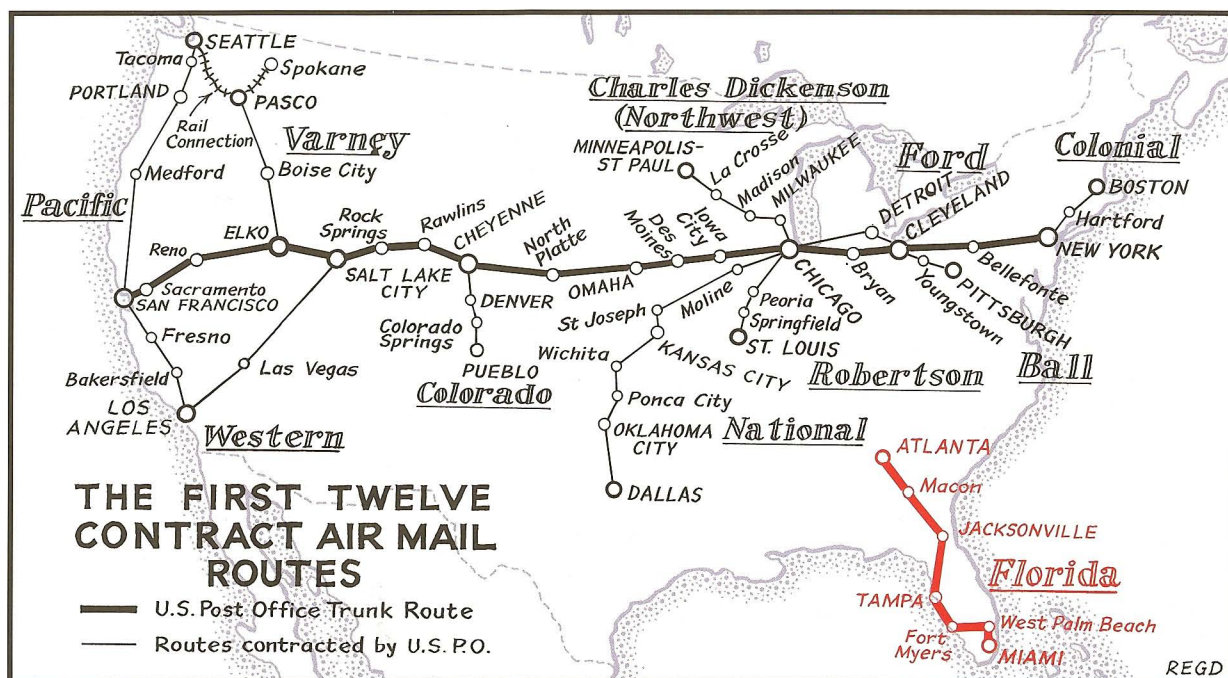
# Off-Line Mail Contract

As reviewed on page 8, the early 1920s had witnessed the beginnings of air transport in the United States. Small companies had emerged, mostly for only short periods, to demonstrate that the airplane could be used commercially, to carry mail—saving time especially on over-water routes where fast trains could not compete—and occasionally passengers.

But there was no incentive from official quarters, not least because flying machines were still viewed as novelties, and more important, were dangerous. This latter aspect was emphasized all over the country by the barnstormer pilots who conducted aerial circuses with stunt flying as a major component of their exhibitions. The average spectator viewed the idea of flying much in the same way as he or she might have viewed the prospect of joining a trapeze act.

But by the mid-1930s, attitudes changed. The politicians in Washington had dragged their feet in enacting legislation to govern flying activities. Senator James Wadsworth introduced a Department of Commerce Bill in 1922, but this was shelved, and control of aviation generally was loose, uncoordinated, and varied from State to State. Then, on 2 February 1925, under some pressure from the railways to terminate the United States Air Mail Service, run by the Post Office, the **Contract Air Mail Act** was passed. Known as the **Kelly Act**, after Representative Clyde Kelly, its main sponsor, the bill provided for the transfer of all the Post Office mail routes to private operators, who would bid competitively for the privilege. The first twelve routes were promptly awarded—see the map on this page—and all except one were in operation before the end of 1926.

Simultaneously with the move towards the privatization of the air mail, the U.S. Government, under the presidency of **Calvin Coolidge**, was taking steps to enact legislation to control the new transport system. The Secretary of Commerce, **Herbert Hoover**, appointed a Joint Committee of Civil Aviation, involving the American Engineering Council, taking note especially of the dramatic progress being made all over Europe, and sporadically in other parts of the world. Although interrupted by the dramatics of Brig.-General Billy Mitchell, Coolidge appointed a special board, headed by his friend **Dwight Morrow**, and the recommendations were



formalized in Congress, and the President signed the **Air Commerce Act** on 20 May 1926. Shortly afterwards, on 3 June, an amendment to the Kelly Act changed the system of payments from a percentage of the actual postage paid to a simple payment by weight.

Interestingly, all except one of the first twelve air mail contractors were connected in a mainly transcontinental route network, linking New York with San Francisco, with branch lines on the Pacific coast, the northeast, and from Chicago. The exception was **Florida Airways**, which ventured alone in the "Cradle of Aviation," probably with ambitions to extend northwards, but which, as narrated on page 10, came to naught, and illustrating the difficulties of establishing an airline during the infant years of development of the industry.



*Florida Airways had wished to launch its service in grand style with a fleet of all-metal Stout 2-AT transport aircraft; but various mishaps necessitated the substitution of other aircraft, including this Curtiss Lark, for the inaugural on 1 April 1926.*



# Florida Airways

Like many airmen who had seen squadron service in France in 1917–18, **Reed M. Chambers** and the famous ace **Eddie Rickenbacker** were among those who realized the potential of the airplane for commercial purposes during peacetime. Immediately at the end of hostilities, they had started other businesses, but the chance to start regular flying came with the passing of the Kelly Air Mail Act in 1925 (see page 9). Together they formed **Florida Airways** on 3 November 1925. Although Eddie was the better known, Chambers had had more experience. He had taken over from Eddie as commander of the 94th Pursuit Squadron and continued to command the 1st Pursuit group after the war ended.

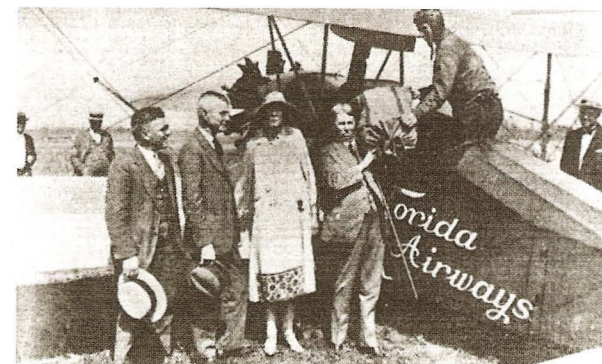
Among the personnel were another ace, Arthur Ray Brooks; Major William Robertson, who had also served in the war; and Lt. John Harding, an engineering officer of the Army Air Corps Round-the-World Flight team of 1924. Other notable names were Vic Chenea, who later assumed a key role in the early development of Pan American Airways; Major William Mayo, Chief Engineer of the Ford Motor Company; and Lt Carl Eielson, an experienced Arctic flyer.

As important as the skilled personnel were the people who financed the embryo airline. The stock offering was 15,000 shares @ \$25.00, and among the investors were financial world notables Percy Rockefeller, Charles Stone, Charles Hayden, Richard Hoyt, and Anne Morgan. In addition to \$300,000 in liquid assets, the Ford Motor Company came in with four of its all-metal **Ford-Stout 2-AT** transport airplanes.

With such an impressive line-up, success should have been sure to follow. But in those precarious years of airline infancy, this was not always easy. They started off in great style, with 5,000 spectators cheering the departure of the four aircraft from the Ford plant at Dearborn, near Detroit, on a chilly 28 December 1925. At Nashville, en route to Miami, another crowd turned out, including the mayor. Unfortunately, the first 2-AT to take off was caught in a crosswind, and veered dangerously towards the mayor and his entourage. The pilot averted mass manslaughter only by steering the plane into the other three 2-ATs, damaging one beyond repair. That airplane, *Miss Fort Myers*, was cannibalized to patch up the other three.



Chief organizer of Florida Airways was Reed Chambers, who had taken over the command of the 94th Pursuit Squadron from Eddie Rickenbacker at the close of the Great War. He is pictured here at Nashville, in January 1926, no doubt trying to sort out the problems of the multiple crash.



This picture marks the preparation for take-off by the Florida Airways Curtiss Lark from Miami on 1 April 1926. Though not sustained for more than a few months, and with the exception of the Ford Motor Company semi-corporate operation, this was the first flight of any of the contracted air mail carriers under the provisions of the 1925 Air Mail Act.

On 11 February 1926, Florida Airways was awarded the CAM 10 air mail contract, Miami to Jacksonville, via Fort Myers and Tampa. The problem was: no airfields. Frenzied activity to fulfill the terms of the contract began, even using prison labor to clear and level scrubland sites. At Jacksonville, the airfield could not cope with the 2-AT and so the inaugural service, made on 1 April, as stipulated by the contract, was flown by a Travel-Air and a diminutive Curtiss Lark.

Passenger service began on 1 June 1926, and was extended beyond Jacksonville to Atlanta on 15 September. But Lady Luck frowned again. Three days later, a hurricane hit Miami and another 2-AT was demolished. Mail volume slackened and the passenger business was not flourishing. Expenses continued to rise, and Florida Airways was forced to suspend operations on 31 December. Pride had gone before the fall. Chambers and Rickenbacker had travelled to Havana to pursue ambitions to the south. But rival aspirant Juan Trippe had formed the Aviation Corporation of the Americas. With little bargaining power, what was left of Florida Airways was sold to Trippe's newly-formed Pan American Airways.





# Ford-Stout 2-AT

6 seats • 100 mph

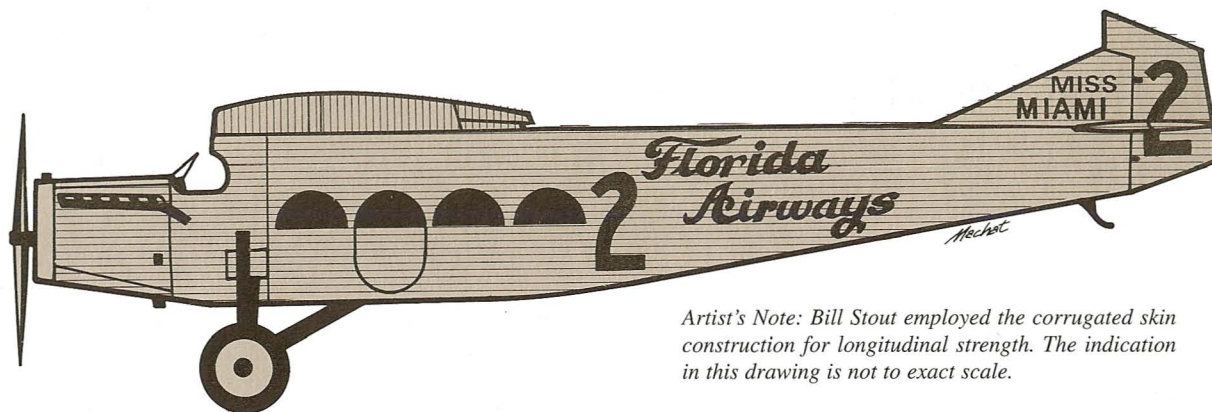
William B. Stout had been the chief engineer of the aircraft division of the Packard Motor Co., and had formed the Stout Metal Aircraft Company, to put into practice his conviction (possibly drawing on observation of German experience) that an all-metal airplane was stronger and more durable than one constructed mainly of wood. Needing backing for his enterprise, he found it with Henry Ford, who put Stout's idea into practice by providing capital and investment for a factory at Dearborn, a suburb of Detroit. This was complete with hangars, an airship mooring mast, an airport hotel, and two concrete runways, the first in the United States.

The **Ford Motor Company** began operations with a daily express service between its plants in Detroit and Chicago, 260 miles, for its private use. The all-metal corrugated construction **Ford-Stout 2-AT Maiden Dearborn** took off on 3 April 1925. When the mail contracts were issued, Ford was thus able to be the first off the mark, merely adding air mail letters to the company packages to be carried. The official starting date was 15 February 1926, after a postponement caused by a destructive fire at the plant.

## FLORIDA AIRWAYS FLEET

Fleet No.	Regn.	MSN	Date of First Service	Name	Remarks
Stout 2-AT					
1			April 26	Miss Tampa	Wrecked at Nashville on delivery flight, Jan 26
2			April 26	Miss Miami	
3				Miss Fort Myers	
4				Miss St. Petersburg	
5			April 26		
Curtiss Lark					
			1 April 26	Miss Tallahassee	Renamed Miss Atlanta
Travel Air					
6			1 April 26	Miss Jacksonville	
Stinson Detroit					
8			15 Sep 26	Miss Atlanta	
9			27 Sep 26	Miss Macon	

Note: Parts of the wrecked Miss Fort Myers were used to repair the other Stout 2-ATs, into which Miss Fort Myers had crashed at Nashville. Later, on 18 Sep 26, another 2-AT was destroyed in a hurricane at Miami, but which one is not known. The two surviving aircraft were returned to Stout Air Services when Florida Airways folded on 31 December 1926. Two of the Stouts were 2-AT-7 (NC 2243) and 2-AT-8 (TN 3944 -TN=Temporary number for delivery purposes), this last aircraft was repossessed in Dec. 1927.



Artist's Note: Bill Stout employed the corrugated skin construction for longitudinal strength. The indication in this drawing is not to exact scale.

### Engines

Liberty  
400 hp (x 1)

### MGTOW

5,790 lb.

### Max. Range

500 miles

### Length

46 feet

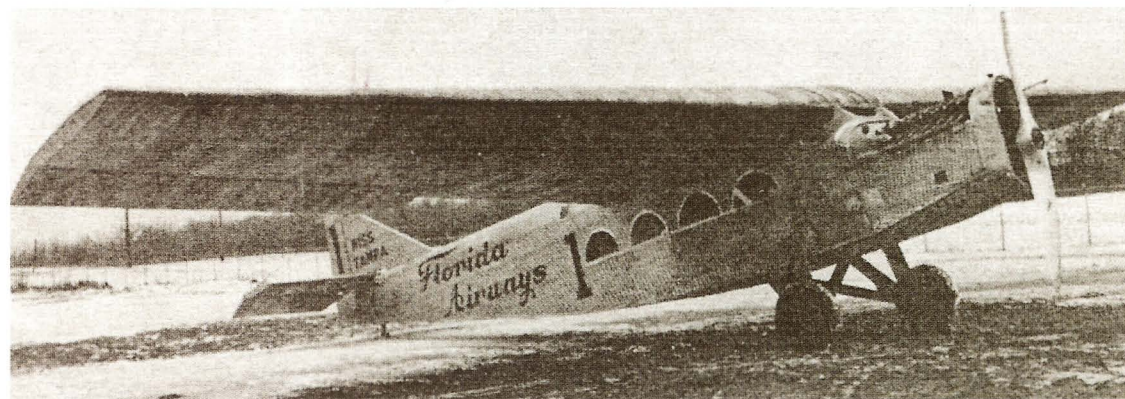
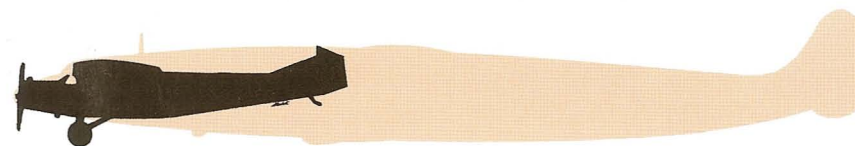
### Span

58 feet

No doubt the Ford organization was fully receptive to approaches made by Chambers and Rickenbacker, as it was eyeing the aviation business itself. Its chief engineer, Major William Mayo, was a director of Florida Airways, and the airline may have been viewed as a testing ground of the metal technology. Certainly, the 2-AT was the forerunner of the brilliantly successful Ford 4-AT Tri-Motor.

### Size comparison with the L 1049G (p.53)

*Ford*



When finally delivered, Florida Airways's Stout 2-ATs were all named after the cities that the airline served. Possibly unique among the pioneers or any other subsequent company, Florida never identified its aircraft with registration numbers.



# Who Was First?

Every one of the trunk airlines of today—those that have survived mergers, take-overs, deregulation, and appalling management—has some claim to being the oldest in the U.S. domestic trunk industry, based on the date when it first carried the mail under the conditions of the Kelly Air Mail Act of 1925. Each claim is legitimate, provided that the “first” is accompanied by at least one, and sometimes more than one, qualifying adjective or explanation. The table on this page sets out the facts.

**Henry Ford** was the first, simply because he was already in operation—see page 5. But the late Eastern Air Lines claim is often overlooked, because it closed down after nine months of flying. Also, its route was completely disconnected from all the other contracted air mail routes, and was perhaps regarded as somehow “beyond the Pale.” All the other claimants can point to continuous service on the original routes since the 1926 inaugurations; although one of them—a United ancestor, **Varney**, was delayed for several weeks while the aircraft were fitted with more powerful engines to cross the mountains of the northwest with safety.

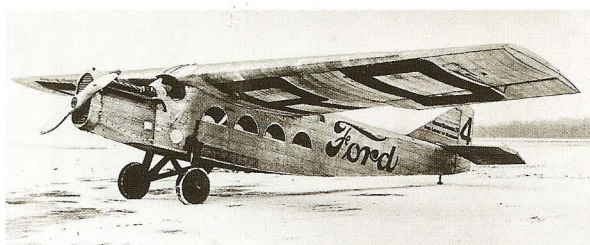
**Robertson’s** route, whose flying was overseen by the young Charles Lindbergh as chief pilot, was to become one of the components of the Universal Aviation Corporation’s airline system, which, in turn, became the nucleus of American Airways/Airlines.

**Western’s** start, if not technically the first, was the most impressive. The “Four Horsemen” pilots managed to maintain unbroken service through the 4,000-foot altitude Cajon Pass, and across the Mojave Desert, to link Los Angeles with the transcontinental trunk route at Salt Lake City. Two airlines claim this achievement as their ancestry, Delta because it absorbed Western Air Lines in 1986; T.W.A. because it was formed as the result of a merger involving Western in 1930. Both claims are a little slender. Delta did not exist in 1926; and when T.A.T. merged with Western Air Express, the original air mail route was not included in the transaction.

Another “first” claimant is of interest through its ancestor air mail contractor, Charles Dickenson, who started a Minneapolis-Chicago route on 6 June 1926. This also ceased after less than two months, but the contract passed to **Northwest Airways**, which re-opened the service and has been operating it under the same name (adjusted in 1934 to Airlines) ever since.

THE FIRST CONTRACT AIR MAIL CARRIERS IN ORDER OF FIRST SERVICE

Date	CAM No.	Contracted Operator	Route	Aircraft	Remarks	Ultimate Title
15 Feb 26	6	Ford Motor Company	Detroit-Chicago	Stout 2-AT	Had operated private package service since 3 April 25. Route acquired by Stout Air Services	United
1 Apr 26	10	Florida Airways Corp.	Miami-Jacksonville via Ft Myers, Tampa	Curtiss Lark Stout 2-AT	Ceased operations, 31 Dec 26. Route acquired by Pitcairn Aviation Inc.	Eastern
5 Apr 26	5	Walter T. Varney	Pasco-Elko	Swallow	Service suspended, 8 Apr 16; resumed 6 June 26	United
15 Apr 26	2	Robertson Aircraft Corp.	St Louis-Chicago	de Havilland DH-4	Absorbed by Universal Aviation Corp., 31 Dec 28	American
17 Apr 26	4	Western Air Express	Los Angeles-Salt Lake City, via Las Vegas	Douglas M-2	After TWA merger on 24 July 30, route continued as WAE, and name changed to Western Air Lines, 17 Apr 41	Delta



Among all the contract air mail carriers, the Ford Motor Company was first off the mark, because it was already operating its own corporate air transport service. The Ford-Stout 2-ATs started flying between Detroit and Chicago on 3 April 1925. This was the Maiden Dearborn IV.



American Airlines also has a justifiable claim. The Robertson Aircraft Corporation operated de Havilland 4Bs between St. Louis and Chicago from 15 April 1926, and was then absorbed by the Universal Aviation group, the nucleus of the future American Airlines.



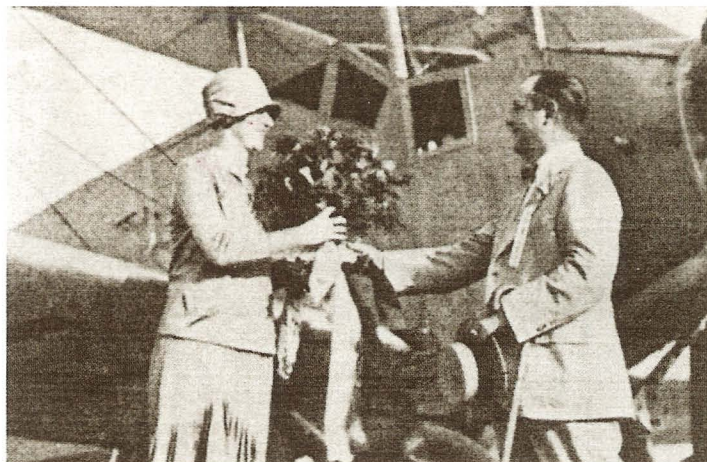
United Air Lines claims that, on 5 April 1926, one of its ancestors, Walter T. Varney, was the first. But the Swallow aircraft was underpowered and permanent service was delayed by eight weeks.



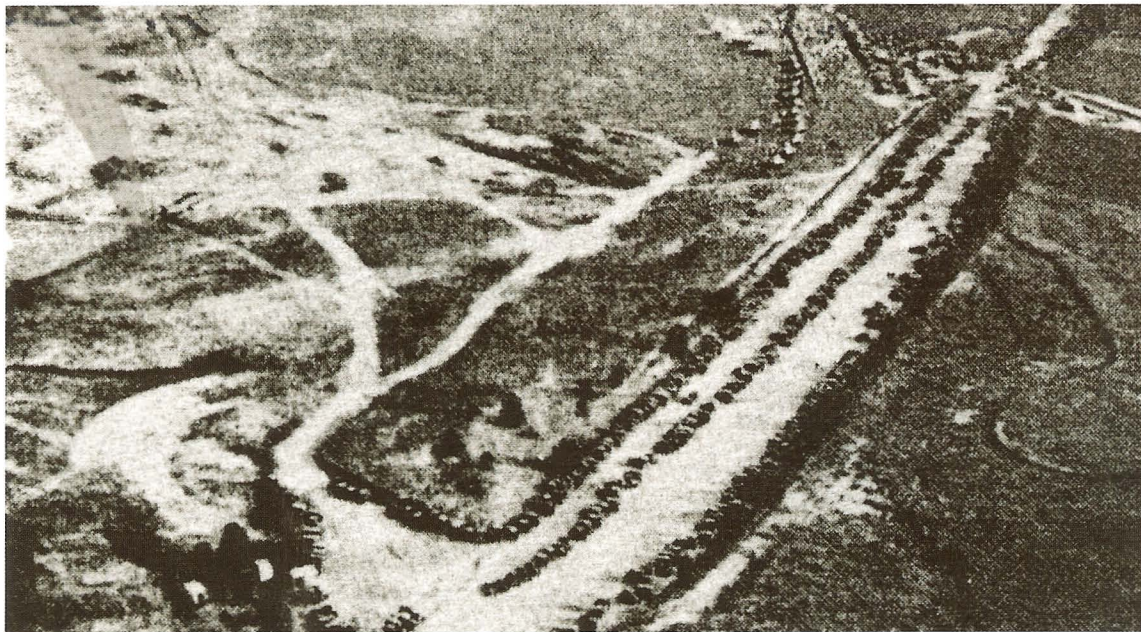
On 17 April 1926, Western Air Express opened services across the inhospitable Mojave Desert, to link Los Angeles with Salt Lake City. The Douglas mailplanes had room for one passenger, in an open cockpit.



# Florida Scrapbook



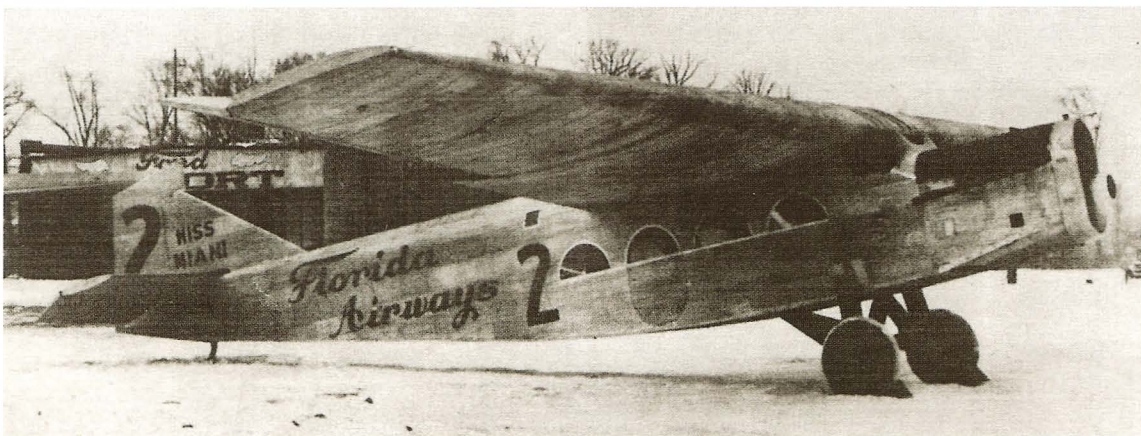
*Mrs Elizabeth Buchanan and Amos Chandler, dignitaries of the Georgia state capital, christen a Florida Airways Stinson Detroiter as Miss Atlanta on 27 September 1926.*



*This mud-patch (or swamp when the rains came) was Candler Field, Atlanta, in 1926, before the construction of a metropolitan airport. Carrying the mails presented problems on the ground as well as in the air:*



*A clearance among the trees often sufficed as an airfield in 1926. Here, at Fort Myers, a dapper Reed Chambers surveys the scene with Thomas Edison, who no doubt decided to stick to non-aviation-related inventiveness. (A.R.Brooks photograph)*



*This Stout 2-AT, No. 2 in the Florida Airways fleet, was strictly designated the Ford-Stout 2-AT, as the Motor Company had bought out Bill Stout's company. It is pictured here in December 1925, before delivery, in Dearborn, Michigan (Ford's factory).*



# Pitcairn Aviation

With the demise of Florida Airways on 31 December 1926 (see page 10), the air mail service from Atlanta to Miami ceased. But service from Atlanta to the north was imminent. After the air mail postage rate had been adjusted on 1 February 1927 at 10¢ per ounce, CAM Route 19, New York to Atlanta, was awarded to Harold Pitcairn, of Philadelphia. On 15 September of that year, he organized Pitcairn Aviation, Inc., as an aircraft manufacturer and air transport operator. His bid was \$3.00 per lb. of mail carried on the route. On 23 November he was awarded the dormant Atlanta-Miami route, now re-numbered CAM 25. Pitcairn thus had one of the potentially most lucrative routes in the United States, one that would later be dubbed "The Gravy Run."

Harold saw no reason why, as an aircraft manufacturer, he should not provide his own aircraft, rather than purchase from others, and so was in no hurry to start service. But William McCracken, Assistant Secretary of Commerce, ordered him, under the terms of the air mail contract, to start New York-Atlanta service no later than 1 March 1928, and Atlanta-Miami service no later than 1 September of that year.

By mutual consent and agreement, the inauguration took place on 1 May 1928, not only because of airfield preparation, but also, more important, the installation of the Lighted Airway; for Pitcairn was to fly at night, to provide the maximum advantage over railroad mail service. Letters posted in New York by the evening could be delivered to Florida the next morning. With its operations base at Richmond, an initial fleet of eight Pitcairn Mailwings, and the Lighted Airway, the airline was soon doing good business on the route (see map). The air mail check for the month of June was \$25,700.

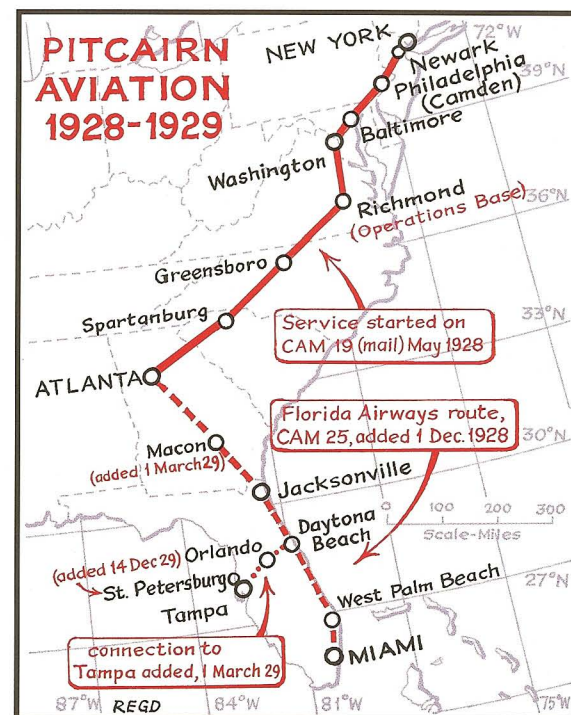
On 1 August 1928, the air mail rate was reduced to 5¢ per ounce, and on 9 September, business was so brisk that a shuttle service was introduced between New York and Philadelphia. The route was extended to Miami on 1 December 1928, at the low rate of \$1.46 per lb., and the fleet increased to 16 Mailwings. These aircraft, strictly mail carriers, with no room for passengers, were quite popular, and Harold received orders from several of the other CAM carriers, including Colonial, Texas Air Transport, and Clifford Ball. On 1 March 1929, a branch line was opened from Tampa to Daytona Beach, via Orlando. Five days later, the shuttle service was extended to Baltimore and Washington.



*Harold Pitcairn successfully bid for the New York-Atlanta air mail contract, but delayed the inauguration until he had built his own aircraft for the task and until the Lighted Airway was completed along the route. He then extended mail service to Miami, picking up the dormant contract formerly held by Florida Airways.*

This was a true success story. Within a year of operations, and in spite of an uncertain safety record (see the fleet list on page 15), Pitcairn had become the fourth largest air mail carrier in the nation, and the third largest in miles flown. But this was entirely with mail, and a threat was looming from Big Brother, in the shape of Clement M. Keys, the forceful entrepreneur who had rescued the Curtiss Airplane Corporation from ruin, and had created the North American Aviation Corporation, with undisguised ambitions to fashion a nationwide airline network, using the largest airplanes to carry passengers as well as mail, and encouraged to do so by the provisions of the Third Amendment to the Air Mail Act of 1925, known as the McNary-Watres Act, after its Congressional sponsors. Passed on 29 April 1930, this was a decisive measure, providing for air mail payments according to the space provided and not by the weight carried. Keys had persuaded the acceptance of a formula that assumed 9 lb. of mail per cubic foot of space provided.

Pitcairn was in a corner. Keys made it clear that he intended to fly passenger aircraft, either his own Curtisses or Ford Tri-Motors, from New York to Miami, with or without a mail contract. Harold thereupon ordered three Fords on 8 November 1928. A game of bluff ensued, with Keys offering to buy out Pitcairn, and the latter holding out for a better offer. On 12 July 1929, a deal was struck. Keys bought out Pitcairn for \$2,500,000, a truly handsome sum in those days. Harold concentrated on manufacturing, including autogiros, as he had acquired the North American rights from Juan Cierva on 14 February 1928.



*The Pitcairn Mailwing was a sturdy aircraft, designed specifically to carry the air mail. It established the important New York-Atlanta-Miami mail service and was used by several other air mail contractors. NC 2895 now hangs in the National Air and Space Museum in Washington.*



# Pitcairn Mailwing

Mail Only • 112 mph

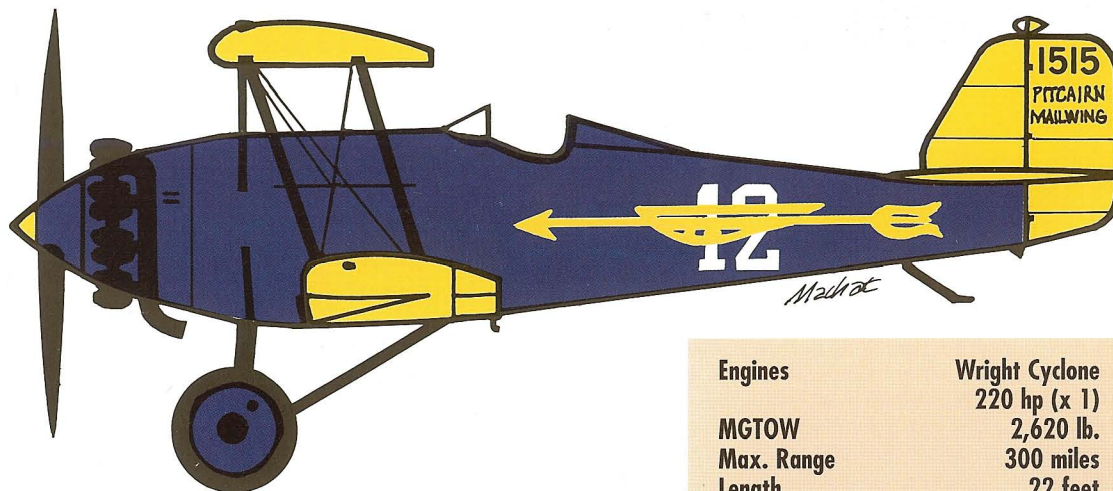
## THE PITCAIRN MAILWINGS

Regn. No.	MSN No.	Date, Service	Remarks and Disposal
<b>Pitcairn PA-5 Mailwing</b>			
NC 2895	1	June 28	Retired 1933, Now hangs in the Smithsonian.
NC 1515	2	28	Crashed into Stone Mountain, GA, 6 May 28
NC 3836	10	28	Crashed 15 Aug 28, Old Fort, NC
NC 4231	13	Feb 28	Crashed 22 May 28, Richmond, VA
NC 4232	14	Feb 28	Crashed 29 April 28, Greensboro, NC
NC 4233	15	Feb 28	Crashed 2 May 28, Philadelphia
NC 4234	16	Feb 28	Operated until Dec 32, sold, 13 May 33
NC 4235	17	Feb 28	Sold 20 Mar 33
NC 5117	21	Apr 28	Crashed 8 July 29 (in-flight fire), Berlin, NJ
NC 5564	23	May 28	Crashed 26 May 28, Ellerson, VA
NC 5677	26	May 28	Crashed 16 Dec 28, Waycross, GA
NC 5808	27	June 28	Sold 11 May 33
NC 6617	28	June 28	Crashed 30 July 29 (wing failure on test flight)
NC 6618	29	June 28	Crashed 1 Mar 29, Daytona Beach

<b>Pitcairn PA-6 Super-Mailwing</b>			
NC 7152	1	July 28	Sold 28 Feb 33
NC 7967	10	Oct 28	Converted to PA-7; Jun 32, to PA-7M, Jul 33; Sold 12 Dec 34 to NAA.
NC 36E	11	Nov 28	Crashed 5 Sep 29, Jetersville, VA
NC 37E	12	Nov 28	Crashed Daytona Beach, 26 Feb 31; also crashed, 22 Aug 32, Rantowles, SC
NC 38E	13	Nov 28	Crashed 13 Sep 29, Ft. McPherson, GA
NC 127E	14	Nov 28	Crashed 25 Apr 29, Blue Plains
NC 215E	18	Jan 29	Destroyed 15 Mar 30, in hangar fire, New Brunswick, NJ
NC 298E	19	Jan 29	Crashed 12 Nov 30
NC 338E	20	Dec 28	Converted to PA-7M, crashed, 9 July 34, Atlanta
NC 353E	21	Jan 29	Converted to PA-7; sold, 31 Dec 34 to N.A.A.
NC 354E	22	Jan 29	Crashed 18 Feb 33, Richmond, VA
NC 681E	31	May 29	Crashed 15 Mar 31
NC 682E	32	May 29	Destroyed 15 Mar 30, hangar fire, New Brunswick, NJ
NC 683E	33	May 29	Withdrawn 33, sold to J.C. Morby
NC 684E	34	Aug 29	Sold 37
NC 804H	44	Jul 29	Crashed 25 Mar 30
NC 545K	45/85	Jul 29	Built from parts of original NC 545K and NC 37E
NC 546K	46/86	Jul 29	Converted to PA-7M (EAT 86); reverted to PA-6, Nov 32, crashed, 19 Nov 32, Chester, SC
NC 69M	52	Aug 29	Retired 30
NC 70M	53	Aug 29	Destroyed 15 Mar 30, hangar fire, New Brunswick, NJ
NC 71M	54	Aug 29	Converted to PA-7, Jul 33; to PA-7M, Jun 34; Sold, 31 Dec 34 to N.A.A.
NC 877M	56	Sep 29	Withdrawn 36
NC 876M	57	Oct 29	Sold 36
NC 825N	60	Nov 29	Sold to Delta Air Lines
NC 826N	61	Nov 29	Withdrawn 33

<b>Pitcairn PA-3 Orowing</b>			
NC 572V	34		Operated 1930-31, for route surveys

<b>Pitcairn PA-8 Super Mailwing</b>			
NC 10750	161	Jan 31	Retired 34
NC 10751	162	"	"
NC 10752	163	"	"
NC 10753	164	"	Sold 35
NC 10754	165	"	Retired 31



<b>Engines</b>	<b>Wright Cyclone</b>
	<b>220 hp (x 1)</b>
<b>MGTOW</b>	<b>2,620 lb.</b>
<b>Max. Range</b>	<b>300 miles</b>
<b>Length</b>	<b>22 feet</b>
<b>Span</b>	<b>33 feet</b>

Harold Pitcairn built an excellent aircraft, specifically designed to carry mail. He was not the only manufacturer of such a plane, but he sold quite a few, and operated a substantial fleet himself. But, as the record shows in the fleet list, the attrition rate was high. At the time, however, crashed airplanes did not receive the nationwide publicity that they do today, and it was much the case of "there goes another one."

To be fair, the incidence of crashes was not always the fault of the airplane. Although Pitcairn himself was a staunch advocate of "Safety First," his pilots were still impregnated with the daredevil spirit and the admirable, though often foolhardy, determination that "the mail must go through." As

with the experience of the Post Office mail carriers flying across the Alleghenies, the Pitcairn pilots would often try to complete their missions when the weather conditions were risky. They took risks, and often paid the price.

Each pilot was assigned an aircraft that was his particular responsibility, so that there was almost a pride-of-ownership feeling among the crew. Aside from keeping his assigned aircraft spick and span, and well maintained, Pitcairn pilots would install items for their own comfort, such as lights, heaters, or cushioned seats. One pilot fitted a siren, which he would switch on as he flew low over a community and causing no little concern; but this device fell silent after he tried it on the Marine Base at Occoquan.



The Pitcairn PA-3 Orowing (NC572V) was one of Harold Pitcairn's earlier designs, and was used only for route surveys in 1930-31.



With an extended fuselage, the Pitcairn Super Mailwing could carry more fuel and more mail than its predecessor.



# North American Aviation

The conglomerate North American Aviation that took over the Pitcairn operation was an impressive organization. Its driving force was Clement M. Keys, who had rejuvenated an ailing company. The corporation had been founded on 6 December 1928 as an investment trust, and under Keys's ambitious drive, it quickly became a holding company for many other enterprises, both in the United States and overseas.

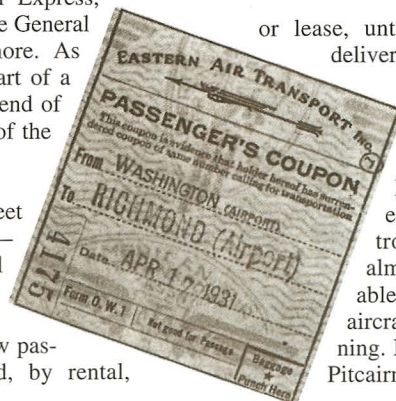
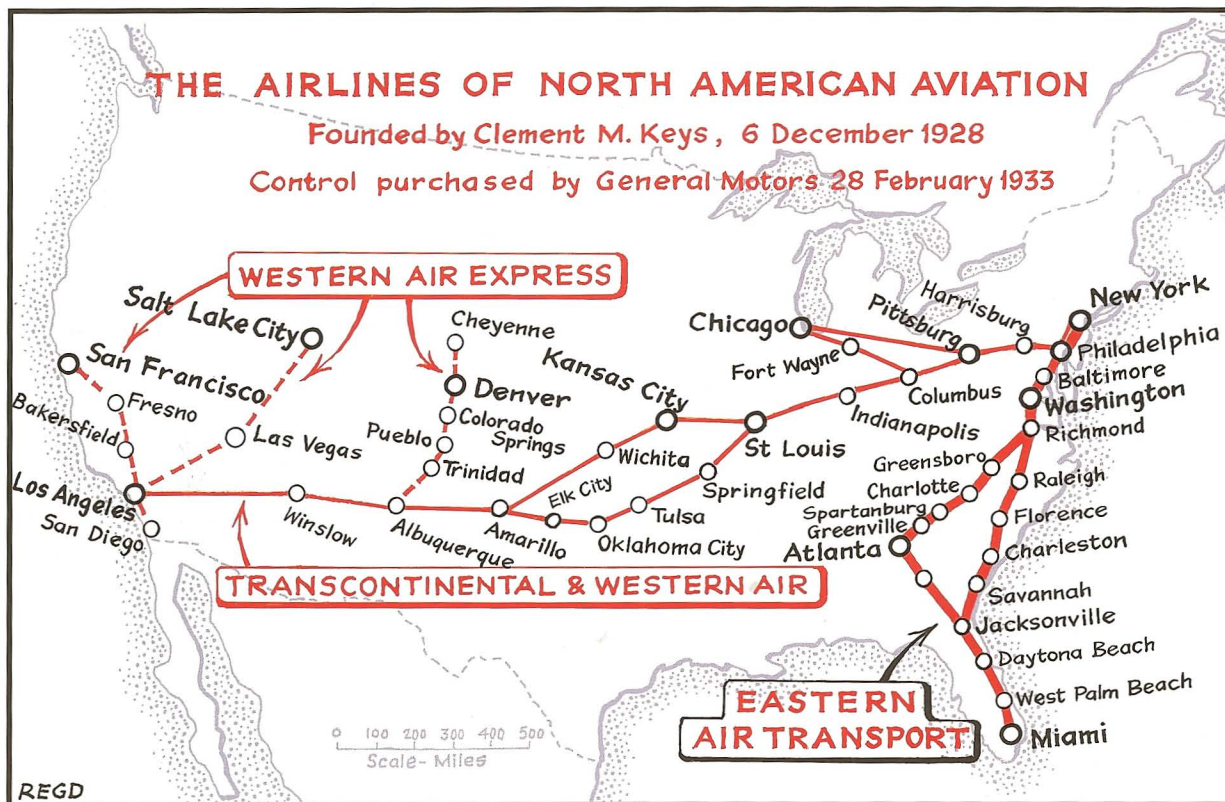
Keys represented the controlling interest of the largest stockholder, the Curtiss-Wright Corporation. Six months before the Pitcairn deal, North American had purchased the Sperry Gyroscope Company; and shortly after Pitcairn, it acquired Berliner-Joyce and the Ford Instrument Company. Through an important subsidiary, Intercontinent Aviation, the Keys interests had founded, or sponsored by partial investment, airlines in Cuba (Compañía Nacional Cubana de Aviación, Curtiss, S.A.), Peru (Compañía Aviación Faucett), and China Airways Federal.

Having bought Pitcairn's airline operation on 12 July 1929 (see page 14) North American moved the executive offices from Philadelphia to New York, to the Sperry Building in Brooklyn. Strictly, Pitcairn became a wholly-owned subsidiary of New York and Atlantic Seaboard Express, and on 15 January 1930, the name was changed to a more appropriate Eastern Air Transport.

By this time, in addition to a myriad of other North American acquisitions (which included shareholdings in Douglas Aircraft and United Aircraft and Transport Corporation) it had substantial interests in Western Air Express, Transcontinental and Western Air, and the General Manufacturing Corporation, in Baltimore. As shown on the map, Eastern was thus part of a nationwide airline system which, at the end of 1930, accounted for upwards of a third of the air transport activity in the country.

North American had to upgrade its fleet quickly if it was to carry passengers—which by 1930 had become essential to supplement the mail payments.

As a temporary measure, therefore, a few passenger-carrying aircraft were acquired, by rental,



or lease, until the new Curtiss Condor aircraft were delivered. This makeshift fleet consisted of a couple of Fokker tri-motors, listed on this page, and a few Ford Tri-Motors, listed on the opposite page.

Even though the airline business had grown explosively, with Big Business grasping control, the practical arrangements were still almost casual, with crew and passengers alike able to stroll on to the airfields and approach the aircraft, even with the engines and propellers running. Note that, on an early boarding pass, the old Pitcairn insignia was still retained.

## Fokker F-10

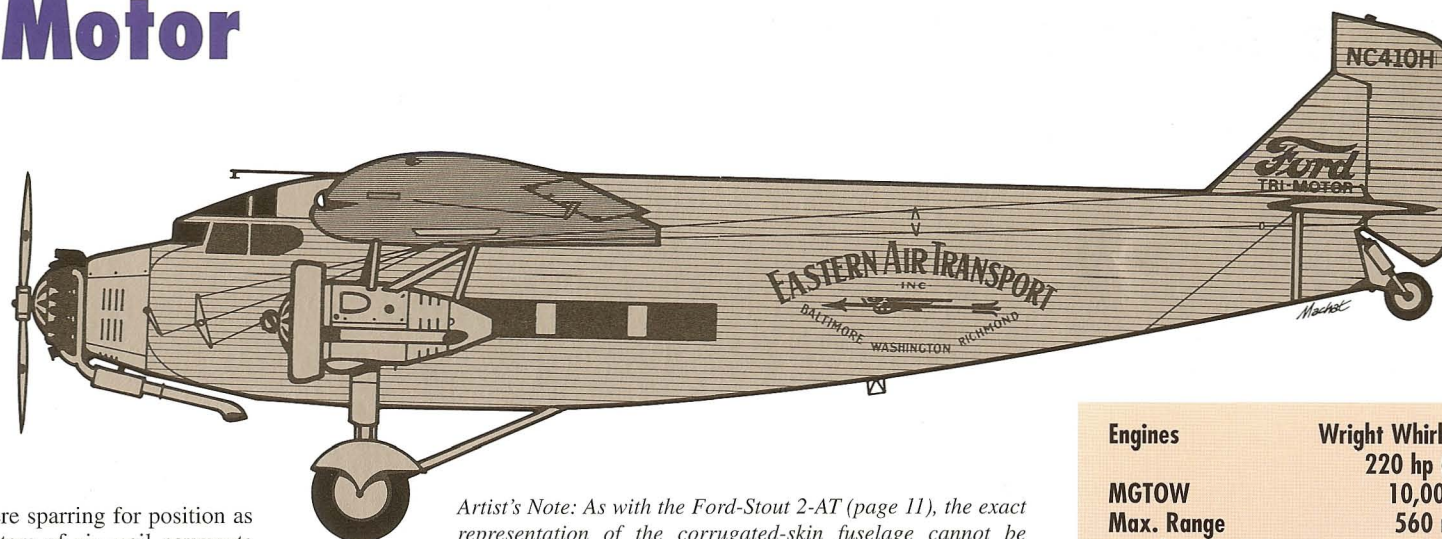
Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
	40N 529M		Aug 30	} Rented from Fokker until Nov 30





# Ford Tri-Motor

12 seats • 105 mph



*Artist's Note: As with the Ford-Stout 2-AT (page 11), the exact representation of the corrugated-skin fuselage cannot be drawn to exact scale*

Engines	Wright Whirlwind 220 hp (x 3)
MGTOW	10,000 lb.
Max. Range	560 miles
Length	50 feet
Span	74 feet

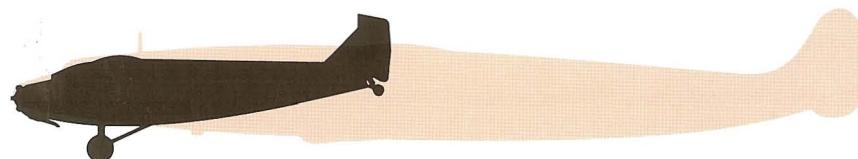
By mid-1929, the U.S. airlines were sparring for position as the impending changes in the system of air mail payments forced them to plan with national, rather than regional perspectives. Not only were amalgamations and alliances in the works; the new laws would encourage the use of larger aircraft, and revenue from passengers would supplement the mail payments that were liable to decrease.

Outstanding among the transport aircraft of the late 1920s was the **Ford Tri-Motor**. Developed from the earlier principles of designer Bill Stout (see page 11), the all-metal Ford was superior to the metal-framed/wooden **Fokker F-10**. And the much-publicized March 1931 "Knut Rockne" F-10 disaster effectively eliminated Ford's competition.

The aircraft quickly became the standard equipment for the aspiring airlines of 1929, deriving much impetus from its

*Ford*

Size comparison with the L 1049G (p.53)



## FOKKER F-10 FLEET

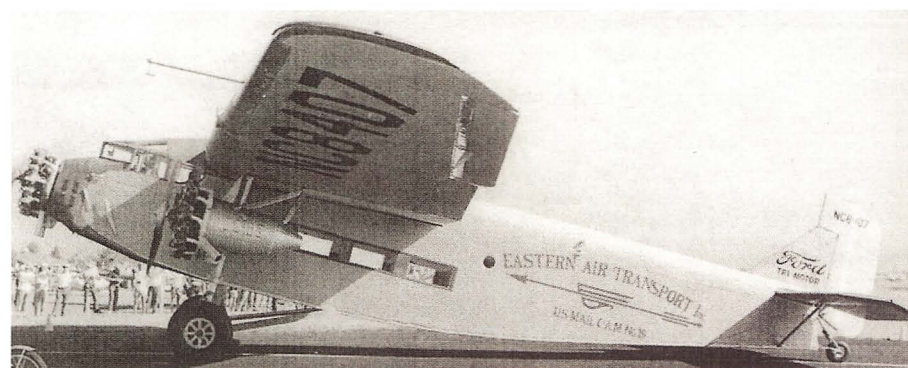
Regn.	MSN	Date of First Service	Remarks
NC8048	1005	mid-1931	Leased from T.A.T.
NC8047	1006	mid-1931	Leased from T.A.T.

## FORD TRI-MOTOR FLEET

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
	NC8401	4-AT-63	22 Jun 29	Delivered to Pitcairn. To Intercont Aviation (for Cubana) 1 Oct 30
	NC8407	4-AT-69	16 Nov 29	Delivered to Eastern. Now flying with the E.A.A. at Oskosh.
	NC8408	4-AT-70	20 Nov 29	Delivered to Pitcairn
69	NC410H	5-AT-C	24 Oct 30	Delivered to Eastern, 16 Oct 30, Sold to TWA, 26 Apr 33

selection for Transcontinental Air Transport (T.A.T.), the "Lindbergh Line."

Deliveries were made to the Pitcairn/ Eastern operation in 1929 but they were not used much. Great faith was put on the Curtiss Condors, which were bigger and more comfortable—at least in the publicity pictures. But they were just as noisy as the Fords, and earplugs were necessary. Normal conversation in the cabin was very difficult.



*This picture of an Eastern Air Transport Ford 4-AT Tri-Motor was taken in 1929, when the airline still retained the insignia of Pitcairn Aviation.*



# Eastern Air Transport

Partly because Clement Keys and North American Aviation realized that the inherited Pitcairn route network had considerable potential for passenger carrying; and partly because the demonstration of such ability would favour its bidding for lucrative air mail routes under the pending new legislation being discussed at the highest levels during 1929; **Eastern Air Transport** began passenger service on 18 August 1930. The first route from New York was only as far as Richmond, and apparently the great Curtiss organization was not at the time able to supply aircraft from its own factories. Thus, for a few months, the mail-carrying Pitcairn Mailwings were supplemented by Fokker F-10s and Ford Tri-Motors, under various leasing arrangements.

Eastern's passenger network was consolidated in a more respectable fashion on 10 December 1930, when Curtiss transport aircraft from its own stable became available. On that date, the 18-seat Condor 18s (or COs) went into service from New York to Washington, where the travel demand was greatest; and the 7-seat Kingbirds opened the service through to Atlanta.

On 1 January 1931, passenger service was extended from Atlanta to Miami, via Jacksonville, with a branch line from Daytona Beach to Tampa and St. Petersburg. On 1 April, a coastal route was added, from Richmond, for passengers and mail (see map), thus shortening the direct flights from the northeast to Florida. On 1 October the larger Condors replaced the Kingbirds as far as Jacksonville, and on 23 October a branch line connected Norfolk with Richmond. Atlanta was connected directly to Savannah on 1 December.

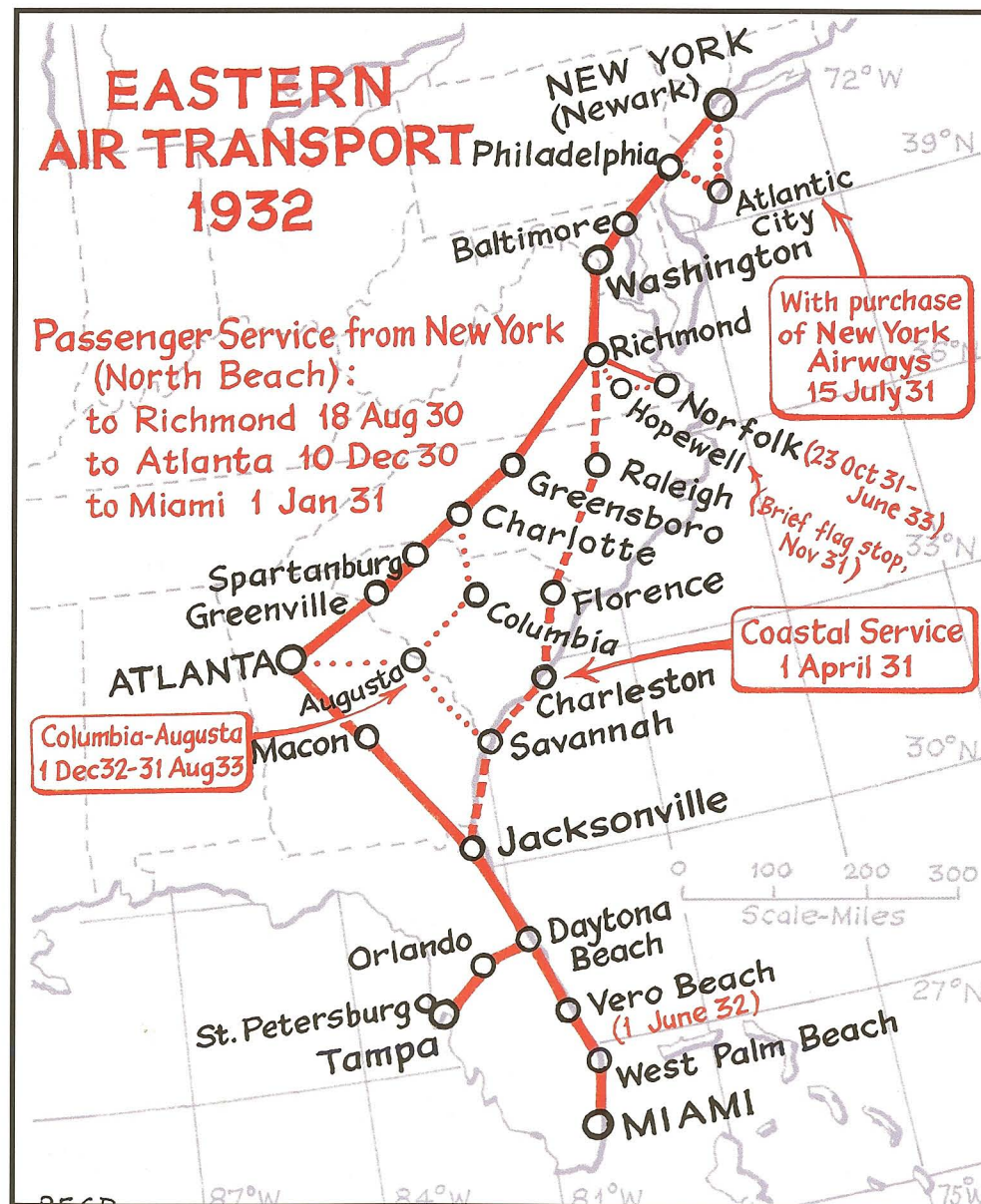
At the end of the year, the airline had carried 32,000 passengers. Although its aspirations to be a party to the upcoming transcontinental air mail routes were frustrated by the airline in-fighting and the desires of the postmaster general Walter Brown, it had other advantages. Not only was it able to operate—for many years, exclusively—the vacation-oriented Florida "Gravy Run;" it made the direct connection with all Latin American-bound traffic at Miami with the United States "Chosen Instrument," Pan American Airways.

With such marketing assets, Eastern's future was assured.



## The Gravy Run

With the consolidation of the route network between the populous northeast (with its frigid winters) and the ever-summer Florida, Eastern Air Lines was sitting on an air transport gold mine. In 1932, the aircraft were still ponderously slow and short in range; but in an astonishingly short time, this situation would undergo a metamorphosis. In 1934 came the DC-2s, and in 1936 the DC-3s, faster, longer-ranged, comfortable air liners. And until 1944, Eastern had the monopoly of what was, at the time, the biggest money-making route in the world.





# Curtiss Kingbird

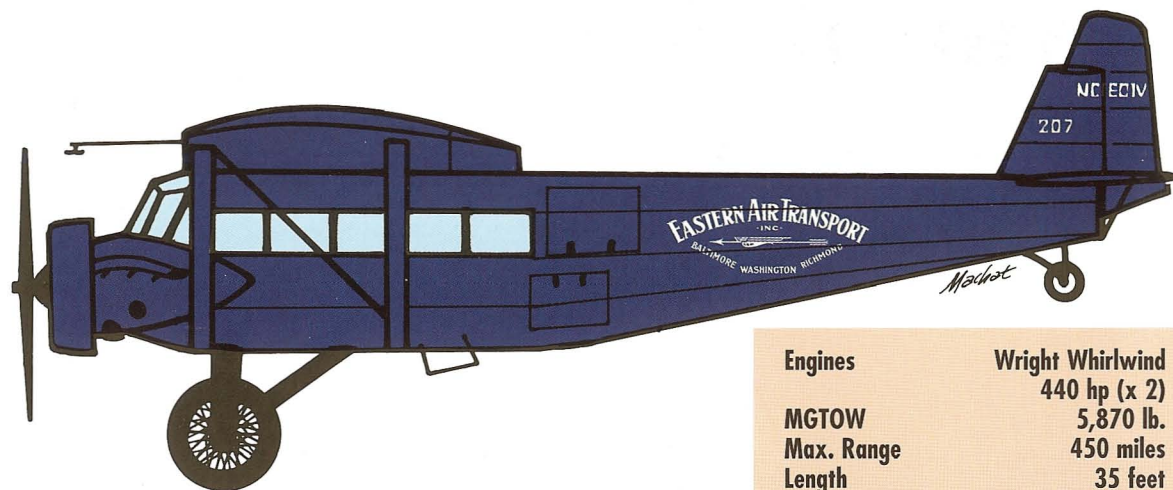
6 seats • 115 mph

The Curtiss manufacturer named its aircraft after birds, and this aircraft was named appropriately, as one of the family of flycatchers is named the Eastern Kingbird. Designed by Theodore Wright, the prototype was approved on 27 July 1929, shortly after North American Aviation had purchased the Pitcairn airline and its mail contracts, and when the industry was moving seriously into the business of carrying passengers.

The two engines were located close to the fuselage, to avoid yawing, but this resulted in a noisy cabin, uncomfortable for the passengers. The design was quickly improved, but this needed improvements to the tail assembly, with twin vertical stabilizers and an extra horizontal tail-plane. This Model J had six seats and had Wright R-760 engines for improved performance. Except for the first three, all Kingbirds were built at the Curtiss-Wright plant at Lambert Field, St. Louis, Missouri.

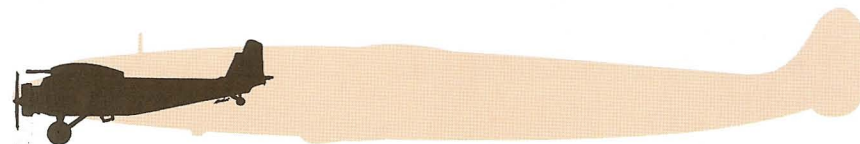
Interestingly, this same tail assembly general design was used on the larger Curtiss Condor 18s, along with the extra struts and wires.

*Until the change of name in 1934, Eastern retained the Pitcairn insignia. This one appears to have emphasized the absorption of the Ludington Line (see p. 26).*



<b>Engines</b>	<b>Wright Whirlwind</b>
	<b>440 hp (x 2)</b>
<b>MGTOW</b>	<b>5,870 lb.</b>
<b>Max. Range</b>	<b>450 miles</b>
<b>Length</b>	<b>35 feet</b>
<b>Span</b>	<b>55 feet</b>

Size comparison with the L 1049G (p.53)



One of Eastern Air Transport's Kingbird fleet, NC621V, warms up its engines.

## CURTISS D2 KINGBIRD FLEET

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
201	585N	2001	Jul 30	Sold April 33 to TWA, then to Colombia
202	586N	2002	Aug 30	Sold April 34
203	588N	2003	Sep 30	Sold April 33 to Costa Rica
204	589N	2004	Aug 30	Sold 31 Dec 34 to N. American Aviation
205	599N	2005	Nov 30	Burned at Atlanta, 5 Sep 31
206	600V	2006	Dec 30	Sold 5 April 34 to Colombia
207	601V	2007	Dec 30	Sold Oct 32 to Curtiss-Wright, Turkey
208	602V	2008	Jan 31	Sold Oct 32 to Curtiss-Wright, Turkey
209	620V	2009	Dec 30	Sold 31 Dec 34 to N. American Aviation
210	621V	2010	Jan 31	Sold 27 July 34 to F.W. Kingsley
211	622V	2011	Jan 31	Sold 4 June 34 to James Drummond
212	626V	2012	Feb 31	Sold 31 Dec 34 to N. American Aviation
214	628V	2014	26 Mar 31	Sold 23 Nov 34 to Costa Rica
215	629V	2015	17 Apr 31	Withdrawn from use, 2 Apr 34
216			Dec 31	Returned to Curtiss Wright Feb 32

All aircraft except the last three were rented from Curtiss Wright until 23 March 31, then purchased.



# Passenger Service



The passengers en route to Miami certainly needed a few Cokes. As indicated by this Eastern timetable in the Curtiss Condor era, the journey took ONLY 830 minutes. With two stops for meals on the ground, this 1,200-mile route was still quite an adventure.

**MIAMI NOW**  
ONLY 830 MINUTES FROM NEW YORK!  
via EASTERN AIR TRANSPORT

U. S. AIR MAIL		AIR PASSENGERS		AIR MAIL	
OUTBOUND -East Time	WEEK	EASTERN STANDARD TIME	WEEK	OUTBOUND -East Time	WEEK
No. 17				No. 18	
7:10 AM	0	Le. New York City	Ar.	7:50 PM	
8:00 AM	0	Le. Newark Airport	Ar.	8:40 PM	
8:30 AM	70	Le. Philadelphia	Ar.	9:30 PM	
9:00 AM	100	Le. Baltimore	Ar.	10:20 PM	
10:00 AM	200	Le. Washington	Ar.	11:10 PM	
11:00 AM	300	Le. Richmond	Ar.	12:00 PM	
11:15 AM	300	Le. Raleigh	Ar.	1:50 PM	
12:00 PM	400	Le. Raleigh	Ar.	2:40 PM	
1:00 PM	500	Le. Raleigh	Ar.	3:30 PM	
2:00 PM	600	Le. Raleigh	Ar.	4:20 PM	
3:00 PM	700	Le. Raleigh	Ar.	5:10 PM	
4:00 PM	800	Le. Raleigh	Ar.	6:00 PM	
5:00 PM	900	Le. Raleigh	Ar.	6:50 PM	
6:00 PM	1000	Le. Raleigh	Ar.	7:40 PM	
7:00 PM	1100	Le. Raleigh	Ar.	8:30 PM	
8:00 PM	1200	Le. Raleigh	Ar.	9:20 PM	
9:00 PM	1300	Le. Raleigh	Ar.	10:10 PM	
10:00 PM	1400	Le. Raleigh	Ar.	11:00 PM	
11:00 PM	1500	Le. Raleigh	Ar.	11:50 PM	
12:00 PM	1600	Le. Raleigh	Ar.	12:40 PM	
1:00 PM	1700	Le. Raleigh	Ar.	1:30 PM	
2:00 PM	1800	Le. Raleigh	Ar.	2:20 PM	
3:00 PM	1900	Le. Raleigh	Ar.	3:10 PM	
4:00 PM	2000	Le. Raleigh	Ar.	4:00 PM	
5:00 PM	2100	Le. Raleigh	Ar.	4:50 PM	
6:00 PM	2200	Le. Raleigh	Ar.	5:40 PM	
7:00 PM	2300	Le. Raleigh	Ar.	6:30 PM	
8:00 PM	2400	Le. Raleigh	Ar.	7:20 PM	
9:00 PM	2500	Le. Raleigh	Ar.	8:10 PM	
10:00 PM	2600	Le. Raleigh	Ar.	9:00 PM	
11:00 PM	2700	Le. Raleigh	Ar.	9:50 PM	
12:00 PM	2800	Le. Raleigh	Ar.	10:40 PM	
1:00 PM	2900	Le. Raleigh	Ar.	11:30 PM	
2:00 PM	3000	Le. Raleigh	Ar.	12:20 PM	
3:00 PM	3100	Le. Raleigh	Ar.	1:10 PM	
4:00 PM	3200	Le. Raleigh	Ar.	2:00 PM	
5:00 PM	3300	Le. Raleigh	Ar.	2:50 PM	
6:00 PM	3400	Le. Raleigh	Ar.	3:40 PM	
7:00 PM	3500	Le. Raleigh	Ar.	4:30 PM	
8:00 PM	3600	Le. Raleigh	Ar.	5:20 PM	
9:00 PM	3700	Le. Raleigh	Ar.	6:10 PM	
10:00 PM	3800	Le. Raleigh	Ar.	7:00 PM	
11:00 PM	3900	Le. Raleigh	Ar.	7:50 PM	
12:00 PM	4000	Le. Raleigh	Ar.	8:40 PM	
1:00 PM	4100	Le. Raleigh	Ar.	9:30 PM	
2:00 PM	4200	Le. Raleigh	Ar.	10:20 PM	
3:00 PM	4300	Le. Raleigh	Ar.	11:10 PM	
4:00 PM	4400	Le. Raleigh	Ar.	12:00 PM	
5:00 PM	4500	Le. Raleigh	Ar.	12:50 PM	
6:00 PM	4600	Le. Raleigh	Ar.	1:40 PM	
7:00 PM	4700	Le. Raleigh	Ar.	2:30 PM	
8:00 PM	4800	Le. Raleigh	Ar.	3:20 PM	
9:00 PM	4900	Le. Raleigh	Ar.	4:10 PM	
10:00 PM	5000	Le. Raleigh	Ar.	5:00 PM	
11:00 PM	5100	Le. Raleigh	Ar.	5:50 PM	
12:00 PM	5200	Le. Raleigh	Ar.	6:40 PM	
1:00 PM	5300	Le. Raleigh	Ar.	7:30 PM	
2:00 PM	5400	Le. Raleigh	Ar.	8:20 PM	
3:00 PM	5500	Le. Raleigh	Ar.	9:10 PM	
4:00 PM	5600	Le. Raleigh	Ar.	10:00 PM	
5:00 PM	5700	Le. Raleigh	Ar.	10:50 PM	
6:00 PM	5800	Le. Raleigh	Ar.	11:40 PM	
7:00 PM	5900	Le. Raleigh	Ar.	12:30 PM	
8:00 PM	6000	Le. Raleigh	Ar.	1:20 PM	
9:00 PM	6100	Le. Raleigh	Ar.	2:10 PM	
10:00 PM	6200	Le. Raleigh	Ar.	3:00 PM	
11:00 PM	6300	Le. Raleigh	Ar.	3:50 PM	
12:00 PM	6400	Le. Raleigh	Ar.	4:40 PM	
1:00 PM	6500	Le. Raleigh	Ar.	5:30 PM	
2:00 PM	6600	Le. Raleigh	Ar.	6:20 PM	
3:00 PM	6700	Le. Raleigh	Ar.	7:10 PM	
4:00 PM	6800	Le. Raleigh	Ar.	8:00 PM	
5:00 PM	6900	Le. Raleigh	Ar.	8:50 PM	
6:00 PM	7000	Le. Raleigh	Ar.	9:40 PM	
7:00 PM	7100	Le. Raleigh	Ar.	10:30 PM	
8:00 PM	7200	Le. Raleigh	Ar.	11:20 PM	
9:00 PM	7300	Le. Raleigh	Ar.	12:10 PM	
10:00 PM	7400	Le. Raleigh	Ar.	1:00 PM	
11:00 PM	7500	Le. Raleigh	Ar.	1:50 PM	
12:00 PM	7600	Le. Raleigh	Ar.	2:40 PM	
1:00 PM	7700	Le. Raleigh	Ar.	3:30 PM	
2:00 PM	7800	Le. Raleigh	Ar.	4:20 PM	
3:00 PM	7900	Le. Raleigh	Ar.	5:10 PM	
4:00 PM	8000	Le. Raleigh	Ar.	6:00 PM	
5:00 PM	8100	Le. Raleigh	Ar.	6:50 PM	
6:00 PM	8200	Le. Raleigh	Ar.	7:40 PM	
7:00 PM	8300	Le. Raleigh	Ar.	8:30 PM	
8:00 PM	8400	Le. Raleigh	Ar.	9:20 PM	
9:00 PM	8500	Le. Raleigh	Ar.	10:10 PM	
10:00 PM	8600	Le. Raleigh	Ar.	11:00 PM	
11:00 PM	8700	Le. Raleigh	Ar.	11:50 PM	
12:00 PM	8800	Le. Raleigh	Ar.	12:40 PM	
1:00 PM	8900	Le. Raleigh	Ar.	1:30 PM	
2:00 PM	9000	Le. Raleigh	Ar.	2:20 PM	
3:00 PM	9100	Le. Raleigh	Ar.	3:10 PM	
4:00 PM	9200	Le. Raleigh	Ar.	4:00 PM	
5:00 PM	9300	Le. Raleigh	Ar.	4:50 PM	
6:00 PM	9400	Le. Raleigh	Ar.	5:40 PM	
7:00 PM	9500	Le. Raleigh	Ar.	6:30 PM	
8:00 PM	9600	Le. Raleigh	Ar.	7:20 PM	
9:00 PM	9700	Le. Raleigh	Ar.	8:10 PM	
10:00 PM	9800	Le. Raleigh	Ar.	9:00 PM	
11:00 PM	9900	Le. Raleigh	Ar.	9:50 PM	
12:00 PM	10000	Le. Raleigh	Ar.	10:40 PM	

For information and reservations:  
EASTERN AIR TRANSPORT, INC.  
150 West 11th Street,  
New York City  
Open 24 hours daily. Pennsylvania City

The year 1929 could be termed the transition year for air transport in the United States, for until then, the emphasis was entirely on the carriage of mail. This was the source of three-quarters, if not more, of the airlines' income, and the inspired efforts of the Hoover administration's new postmaster general, Walter F. Brown, had not yet taken shape or come into effect.

The airlines had to look after their passengers, many of whom were apprehensive of taking to the air. The airlines had to provide stewards, rather like the railroads, and, in some cases, stewardesses. United Air Lines's ancestor, Boeing Air Transport, can rightly claim to have been the first to employ the ladies, but Eastern was not far behind. And indeed, their hostesses, as they were called by the company, were more than nursemaids, as the charming picture on this page shows.

They did not serve meals, but Coca-Cola was on the menu. On the southbound New York-Miami flight, lunch was

served at Richmond, and dinner at Jacksonville. Northbound, taking off at 5.20 a.m., breakfast was at Jacksonville, and dinner at Raleigh. Aircraft were equipped with two-way radio and were multi-motored, amenities which, only a few years previously, were not available.

In addition to the Florida vacationers, a flag stop was sometimes made at Brunswick, Georgia, "to drop off hunters, fishermen, and yachtsmen, bound for Jekyll Island and Sea Island." And at Atlanta, passengers could enjoy a "good southern meal for seventy-five cents at the Candler ("Coca-Cola") field restaurant."

Until 1933 and the T-32 Condors (pages 24-25) Eastern continued to use the Pitcairn insignia.



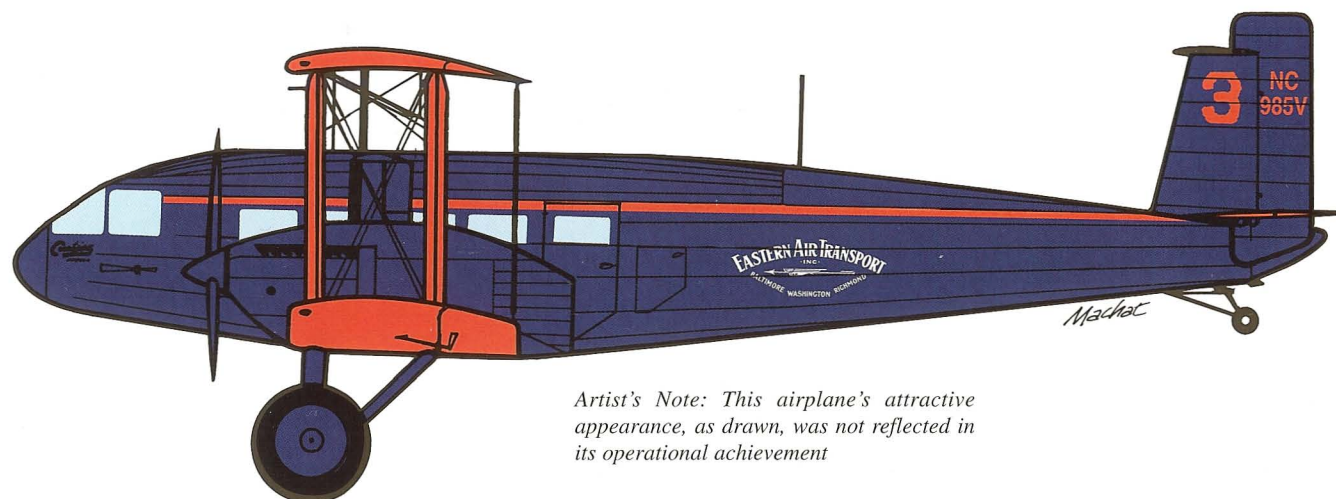
This large biplane did not receive much commendation from its users, which consisted almost entirely of the companies affiliated to its manufacturer. One pilot claimed difficulty in persuading the two wings to fly in formation; and the forest of struts and wires created a disturbing sound as though the aircraft was in constant pain.



# Curtiss Condor CO (or 18)

18 seats • 118 mph

*Curtiss*



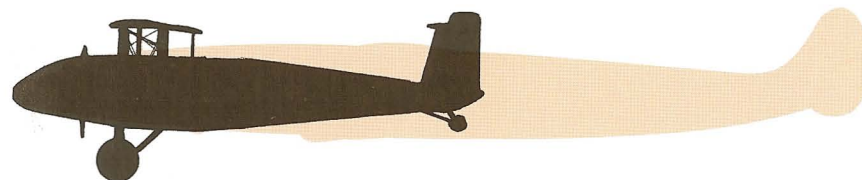
Artist's Note: This airplane's attractive appearance, as drawn, was not reflected in its operational achievement



Eastern Air Transport made much of its on-board service in its promotion. And things were different in the early 1930s. Smoking was encouraged, a practice that today would be regarded as undesirable, at least. With the aircraft in those days, it was probably dangerous. And there was no evidence of seat-belts.

<b>Engines</b>	Curtiss Conqueror
	1,200 hp (x 2)
<b>MGTOW</b>	17,678 lb.
<b>Max. Range</b>	500 miles
<b>Length</b>	58 feet
<b>Span</b>	92 feet

Size comparison with the L 1049G (p.53)



## CURTISS CO (CURTISS B20)

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
1	NC185H	G-1	Aug 31	Previously with T.A.T.; then leased; purchased on 11 March 32, Newark, NJ
2	NC725K	G-2	July 31	Crashed 15 Jan 33
3	NC985V	G-3	May 31	Previously with T.A.T.; then leased; purchased on 21 Oct 31. Sold Nov 34 to Chamberlain Flight Service
4	NC726K	G-4	Nov 30	Previously with T.A.T.; then leased; purchased on 21 Oct. 31. Sold May 35 to North American Aviation
5	NC727K	G-5	Dec 30	Leased, then purchased, 26 Jan 31. Sold April 36 to Chamberlain Flight Service
6	NC728K	G-6	Dec 30	Leased, then purchased, 26 Jan 31. Sold July 35 to Chamberlain Flight Service
				Leased, then purchased, 26 Jan 31. Sold Aug 35 to Chamberlain Flight Service

All aircraft leased from North American Aviation, which controlled Curtiss-Wright, all part of the conglomerate formed by Clement Keys, until 23 March 31, then purchased.



This picture of the Curtiss Condor CO (or 18), though attractive enough as a latter-day large biplane, belies its performance. TWA's Chief Engineer, described it as an aerodynamic monstrosity. Pilots were hard pressed to avoid constant "Dutch Rolls," and passengers were prone to airsickness because of the weaving motion.



# New York Airways

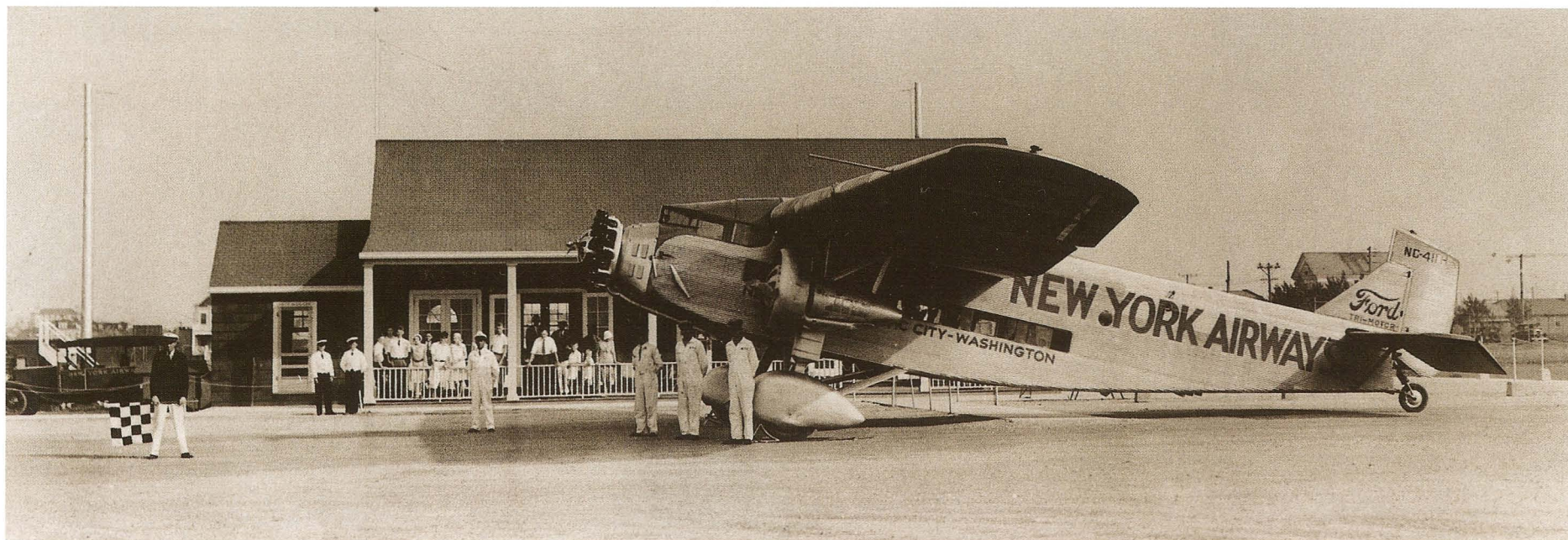
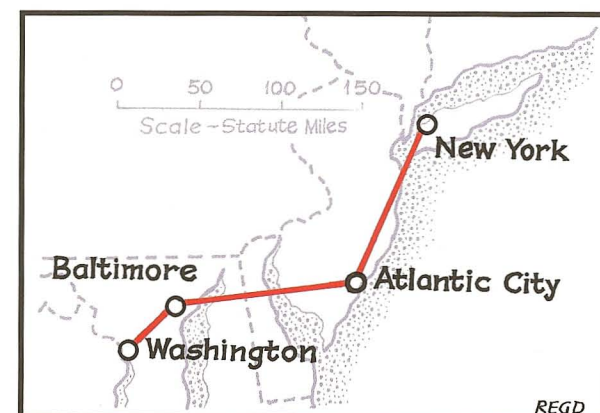
This company had originally been organized by Juan Trippe and a group of influential friends to bid for the New York-Boston mail contract against Colonial Air Transport. Neither company won, but the two joined forces under the latter's name. The former was incorporated as Southern Air Lines, Inc., on 8 July 1927, six days after the Trippe group had formed the Aviation Corporation of the Americas, later to become Pan American Airways. Southern was acquired by Trippe's corporation, and retained as a subsidiary, renamed as **New York Airways** on 27 June 1928.

It began service on 1 June 1930 from North Beach airfield (the old Curtiss-Wright Field, now LaGuardia Airport) to Atlantic City, with a fleet of two Ford Tri-Motors, a Fokker F-10, and a Sikorsky S-38 floatplane. On 2 August, the route was extended to Washington, via Baltimore.

On 15 July 1931, Pan American sold New York Airways to Eastern Air Transport, to make a valuable addition to that airline's map.

Promotion for New York Airways was persuasive, as shown by the extracts from publicity pamphlets on page 23. This may have been one of the earliest versions of what was, in later years, to be termed the Inclusive Tour. Even in the early 1930s, the price must have been attractive. The normal one way fare was \$14.45, and a special commutation ticket cost \$100 for eight one-way trips. Passenger boardings during the summer months were measured in the thousands.

The wording in the left-hand column opposite is self-explanatory. Additional incentives explained were to the effect that "you leave the heat and noise of New York in a luxurious multi-motored airliner, manned by experienced transport pilots, a radio operator, and a steward." Also, "....if you just want some real fun, invest in this Air Cruise to Atlantic City. No other investment you can make today will yield such dividends in health and pleasure." Accommodation was either at the Ambassador Hotel or at the Ritz.

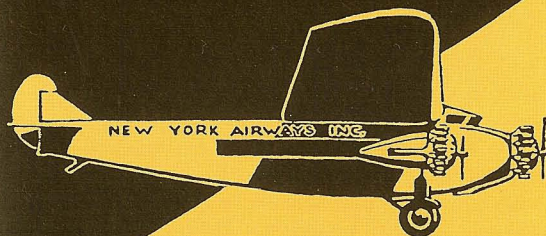


*This picture of a New York Airways Ford Tri-Motor is a Model 5-AT (NC-411H) posing for the camera at Atlantic City. This Ford was one of the few that were fitted with "wheel-pants," intended to reduce aerodynamic drag from the landing gear. On the left is one of the limousines used to transfer the clientèle from the airport to the beach-side hotels.*



# Inclusive Tour

**FOR 3 DAYS ALL EXPENSE**  
**AIR CRUISES**  
**DAILY TO ATLANTIC CITY**



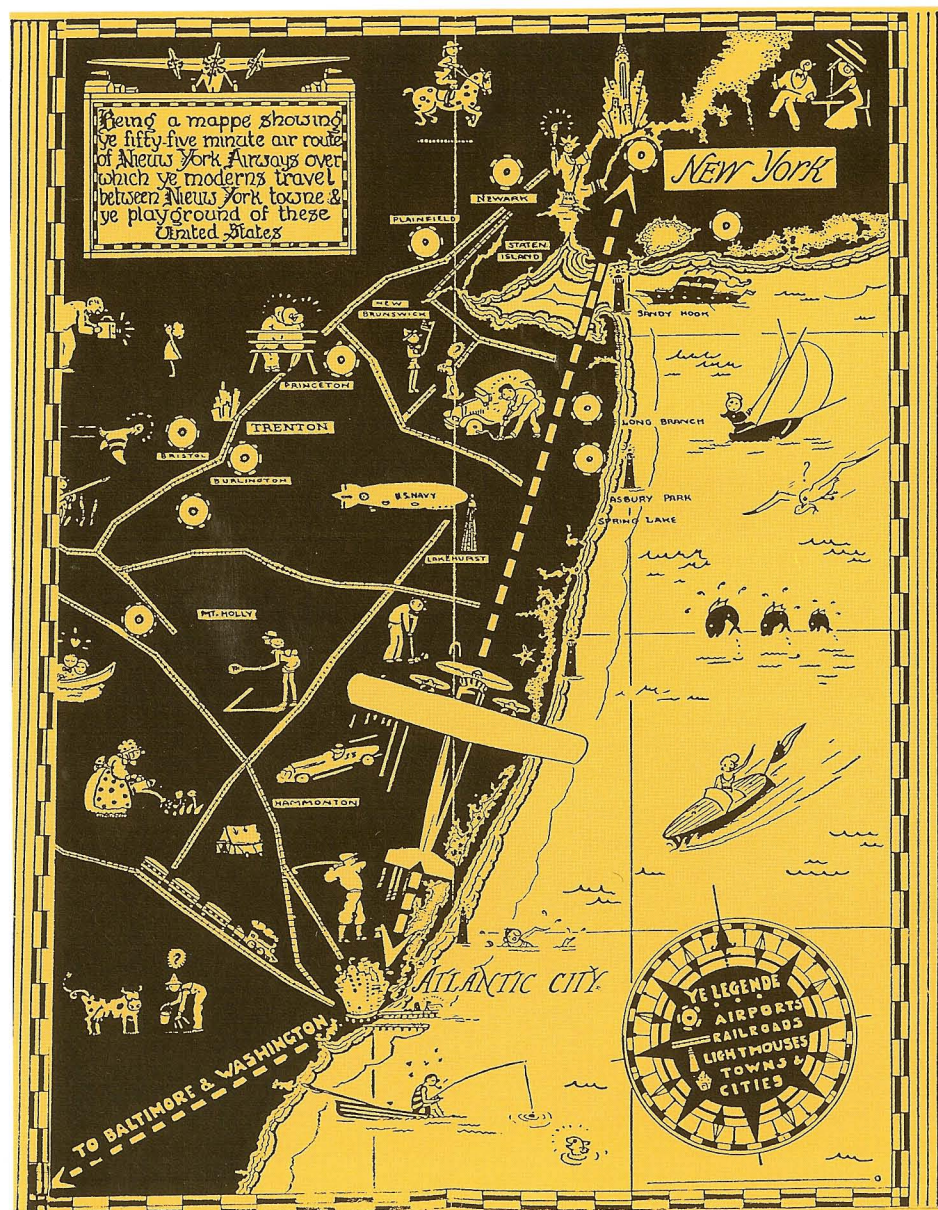
**FLY** TO ATLANTIC CITY  
 ONLY 55 MINUTES BY AIR

**LIVE** AT THE AMBASSADOR OR  
 RITZ - CARLTON HOTELS

**ENJOY** OCEAN BATHING DI-  
 RECT FROM HOTELS

**\$49<sup>50</sup>** INCLUDES ROUND TRIP  
 BY AIR, ROOM WITH BATH  
 FOR 3 DAYS, AND 8 MEALS

**NEW YORK AIRWAYS, INC.**  
 COOPERATING WITH THE





# General Motors Takes Control

On 24 April 1930, President Hoover signed into law the **McNary-Watres Act** and the face of commercial air transport in the United States underwent a metamorphosis. Hitherto, as many as thirty different companies had operated what would now be called regional networks, even commuter systems. Only one, operating from San Francisco to Chicago, could claim to challenge the railroads as an effective alternative. They all aspired to obtain mail contracts. Some of the lucky ones managed to come close to breaking even and a couple even made money; but most of them went into the red. Those that tried to operate without the mail were doomed from the start, simply because the operating costs and overheads of running an airline were too high. The aircraft were technically inefficient, operationally unreliable, and too small to offer minimal comfort standards for passengers. Furthermore, most of the small companies were not yet educated into the special organizational requirements for running an airline.

With the passing of the act, mail payments were paid according to the capacity offered, with a formula to encourage or compensate for special circumstances. This replaced the former system of paying by weight carried, which was always a gamble. The new volumetric-based scheme stimulated the introduction of larger aircraft, so as to supplement mail payments with passenger revenues, and, as noted in this book, aircraft such as the Fokker F-10, the Ford Tri-Motor, and the Curtiss types soon comprised the fleet rosters of the airlines.

These were no longer local mail carriers. The stimulus from the government through the McNary-Watres Act combined with a new interest, almost enthusiasm, in flying by the general public. This had been caused mainly by the remarkable trans-Atlantic flight by the 25-year-old air mail pilot, Charles Lindbergh, who followed his epic achievement with a goodwill tour of the United States, visiting every one of the forty-eight, encouraging local authorities to build airfields, develop air-mindedness, and sponsor airline activity.

One result was that the financing of airlines was no longer a local affair. Big Business got into the act. Control of the new larger groups passed to organizations such as the **Pennsylvania Railroad**, the **United Aircraft Corporation** (Boeing and Pratt & Whitney) and the **Aviation Corporation of America**, and (see page 16) Clement Keys's **North American Aviation**. The directors were no longer car dealers or aviators; they were bankers.

But even Keys was not omnipotent. In spite of his grandiose plans and bold initiatives, he over-reached himself,

even maintaining the survival of his empire by transferring his own investments. His health suffered, and he retired from the scene of multi-million financial manipulations. On 28 February 1933, the great **General Motors Corporation** purchased control of North American, through its subsidiary, General Aviation Corporation, for \$3,676,000. In addition to Eastern, it controlled **Western Air Express** and **Transcontinental & Western Air (TWA)**, in essence about a third of the United States air transport industry.

General Motors even changed the name of Western to General Airlines, and toyed with the idea of going into the air transport airplane manufacturing market. But this was the limit of its direct penetration into commercial aviation. When it took over, the Eastern flagship was the **Curtiss T-32**. These had only just gone into service but their life was short, as two more revolutions were about to take place.

One was of technology. In 1933, **Boeing** produced a new transport airplane, the **Model 247**, one which later historians would call the first "modern" airliner. It was a monoplane; the structure comprised the technique of stressed skin instead of tubular steel; it was aerodynamically clean; and its landing

gear was (partially) retractable. Altogether, it flew about 60% faster than any of the other transport aircraft of its day.

The other revolution was political. Postmaster General Brown's grand plan was for a coordinated national airways network, based on soundly financed and well-organized corporations. But some of the disgruntled aspirants for lucrative mail contracts claimed that the systematically-devised oligopoly had been the result of favoritism and possibly corruption. The "Air Mail Scandal," as it later became known, resulted in the Black Committee, whose revelations resulted in the cancellation of all the old mail contracts. The Army Air Corps was not able to substitute adequate replacement service, and new contracts were quickly put into effect.

One of the provisions of the new **Black-McKellar Act** of 1934 was that no company involved in surface transport, land or sea, road or rail, could be involved in the airline business. Thus General Motors was forced out of aviation almost as soon as it had thrown its hat into the ring. Interestingly, for different reasons, the other major car manufacturer, Ford, had already withdrawn from the field, and had stopped building airplanes.



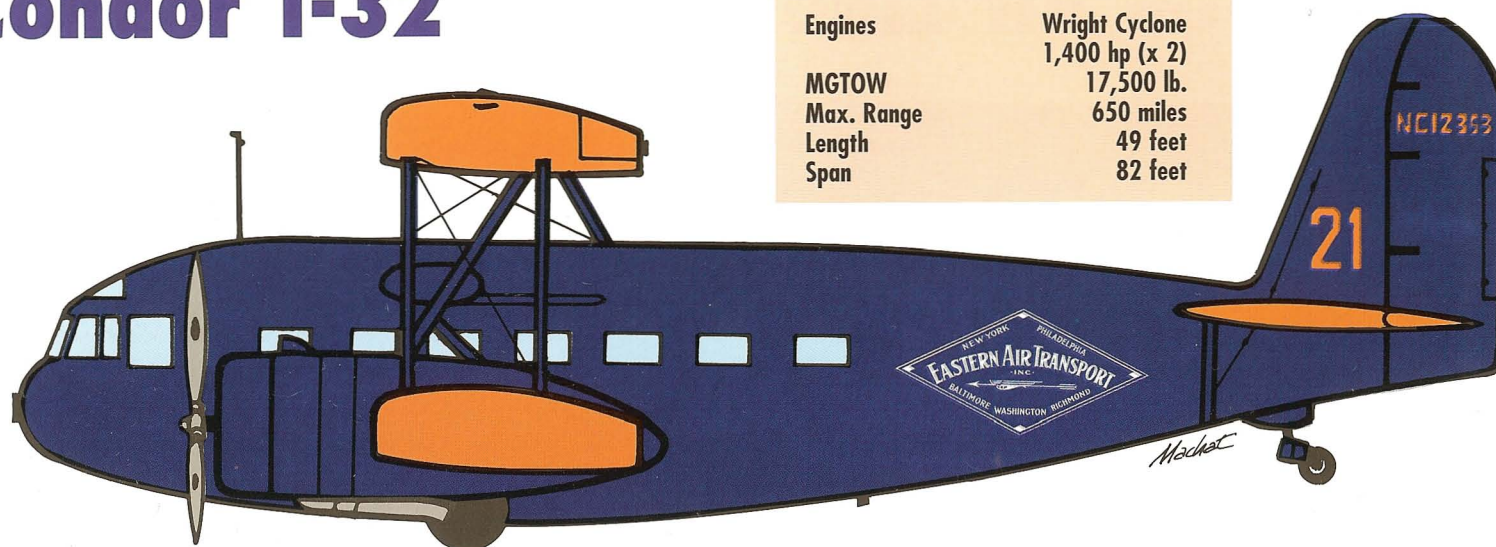
*This side-view picture of the Condor T-32 can be compared to that of the Type CO (or 18) on page 20. The ponderous tail assembly of the older design had been cleaned up, the fuselage was aerodynamically cleaner, and the more powerful radial engines improved the cruising speed.*



# Curtiss Condor T-32

14 seats • 145 mph

*Curtiss*



<b>Engines</b>	Wright Cyclone
	1,400 hp (x 2)
<b>MGTOW</b>	17,500 lb.
<b>Max. Range</b>	650 miles
<b>Length</b>	49 feet
<b>Span</b>	82 feet

As previously noted, the biplane was a dying breed. This variant of the Curtiss Condor was the last large biplane built in America. Only in Great Britain, where the 40-seat Handley Page HP-42s provided slow but elegant service (complete with five-course meals) on the London-Paris and other European routes, did the biplane survive through the 1930s. This Condor was able to provide sleeping accommodation for American Airlines on its transcontinental routes, but the limited range, the noise, and the vibration: all these factors, did not provide much opportunity for sleep. As for Eastern, it had no sooner introduced the new Condors into service in March 1933 when the revolutionary **Boeing 247** monoplane changed the entire world of air transport in the United

States, when it demonstrated a coast-to-coast 20-hour schedule

All the Fokkers, Fords, and the earlier Curtisses, as well as other miscellaneous types, were immediately rendered obsolete.

**Size comparison with the L 1049G (p.53)**



## CURTISS CONDOR T-32

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
21	NC12353	21	23 Mar 33	Sold May 37
22	NC12366	28	3 June 33	Sold July 37
23	NC12367	29	13 June 33	Sold April 37
24	NC12368	30	24 June 33	Sold April 37
25	NC12369	31	30 June 33	Sold May 37
26	NC12373	34	27 July 33	Crashed 21 Sep 33
27	NC12374	35	7 Aug 33	Sold May 36
28	NC12375	36	16 Aug 33	Sold Apr 37
29	NC12376	37	24 Aug 33	Destroyed by fire 23 Jan 35



*This Condor T-32 picture can be compared with that of the Type C0 (or 18) on page 21. For a biplane, it was satisfactory, both in performance and capacity. But it was still noisy and its life was short, being completely outclassed by the new generation of airliners that were to enter service from 1933 onwards.*



# Ludington Air Lines

**New York  
Philadelphia  
Washington**

*Ten Passenger  
Tri-Motor  
Planes*

From New York  
and Washington

**Every  
hour  
on the  
hour!**

*Ten Schedules  
Daily*

**The LUDINGTON LINE**  
NEW YORK, PHILADELPHIA AND  
WASHINGTON AIRWAY CORPORATION

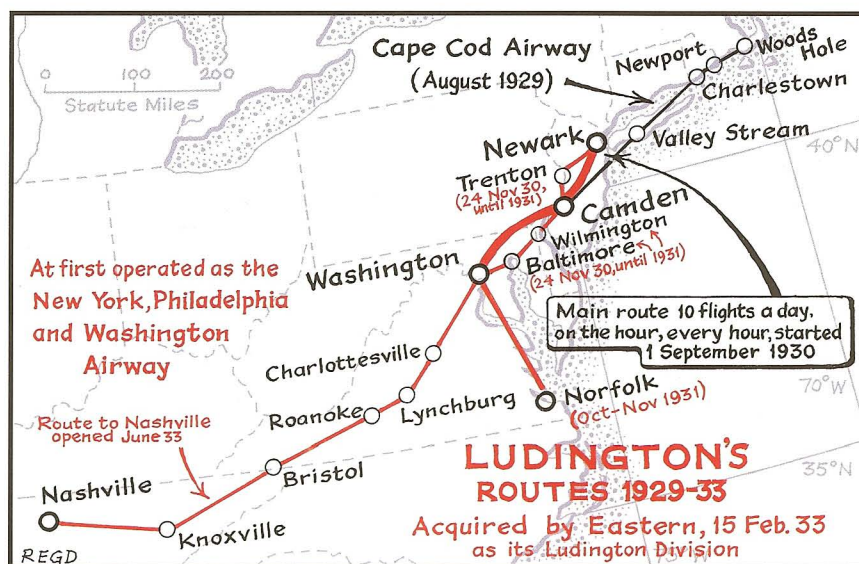
As early as the summer of 1928, there had been a Washington-New York Air Line, operating with Ryan Broughams, and improved the following year with Lockheed Vegas, which could fly non-stop in 90 minutes. C. Townsend Ludington, a Philadelphia businessman, had also operated, in August 1929, the Cape Cod Airway (also listed as the Ludington Flying Service) from Camden, Valley Stream, Long Island, to Woods Hole, Massachusetts, via points in Rhode Island, using a Travelair 6000 and a Fairchild 71. Then on 1 September 1930, the talents and resources of these two operations were combined to make a definite mark in the annals of air transport history in the United States.

With his brother Nicholas, Ludington began service on 1 September 1930 in dramatic fashion. With ex-T.A.T. airline executive Paul Collins and Gene Vidal, plus the famous Amelia Earhart as co-directors, they launched the New York, Philadelphia and Washington Airway Corporation, but known familiarly as the **Ludington Line**. Using at first 6-seat Lockheed Vegas, then ten-seat Stinson tri-motors, it began right from the start with ten flights a day, advertised as "On the Hour, Every Hour," a slogan that has passed into the airline vocabulary as the accepted standard of good airline service, and which became known as a shuttle service.

The New York-Washington round trip was priced at \$23.75—less than the Pullman rail fare—and the flying time was less than two hours, compared to the five hours by train. Such was its popularity that, within a year, it was carrying 60,000 passengers annually, or a quarter of the United States total. And in the first quarter, it made a profit, unheard-of for a passenger carrying airline without a mail contract.

As shown on the map, extensions were made, and the Ludingtons pressed hard to obtain a mail contract, but were not pleased when postmaster general Walter Brown awarded it to Eastern Air Transport, although the Ludington bid was considerably lower. There were many recriminations and the affair was high-lighted during the "Air Mail Scandal" investigations in the Spring of 1934. But Ludington Air Lines (as it had become by December 1932) did not fit into Brown's master plan for the airline industry, and he invoked his privilege of defining who was the "responsible" bidder.

After the initial success, the Ludingtons were losing money, and made a last-minute attempt to qualify by expanding the operation northward to Boston in December 1932, and southward to Nashville on 23 January 1933. But it was not to be. On 15 February 1933, the company was taken over by Eastern Air Transport as its Ludington Division.





# Stinson SM 6000

10 seats • 110 mph

Ludington began service with Lockheed Vegas, which were demonstrably faster than the Fords and the Fokkers that had become the standard equipment for the pioneering airlines of the late 1920s. But the passenger demand was such that, as narrated on page 26, larger aircraft were needed. The choice was the **Stinson SM 6000**, one of many models produced by that company. It was not an all-metal aircraft, like the Ford, and it was slower than the Vega. It was, however, reasonably comfortable, and for the short distances involved, and in the well-developed airline environment of the New York-Washington route, the technical requirements were not excessive (no mountains to cross) and the speed, twice as fast, at least, as the train, was adequate. And for the Ludingtons, it was economical, as a Stinson was only half the price of a Ford.

Compared to other transport aircraft, the Stinson has often been overlooked by the chroniclers of airline history. And the fact that these aircraft carried such a high percentage of the total airline traffic in the United States (see page 26) is often forgotten.

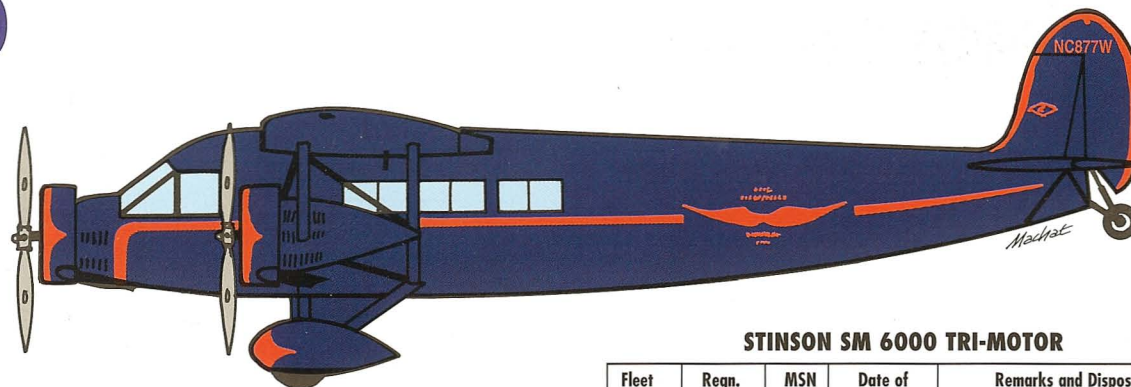
## STINSON SM-8A JUNIOR

Fleet No.	Regn.	MSN	Date of First Service	Disposal
30	NC 468Y	M4275	15 Feb 33	Sold May 33

Acquired with acquisition of Ludington.

## CONSOLIDATED FLEETSTER

Fleet No.	Regn.	MSN	Date of First Service	Disposal
34	703Y		15 Feb 33	Taken over from Ludington Sold, June 33
35	704Y			
36	705Y			



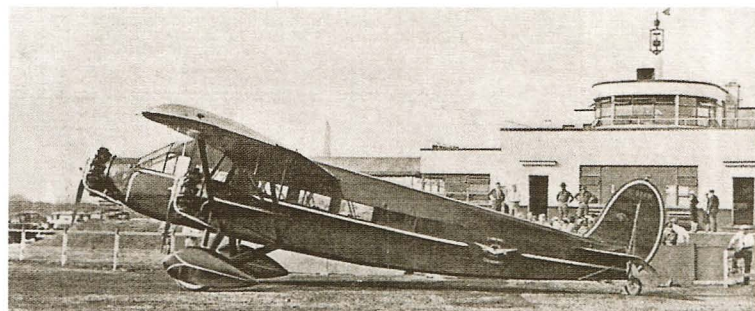
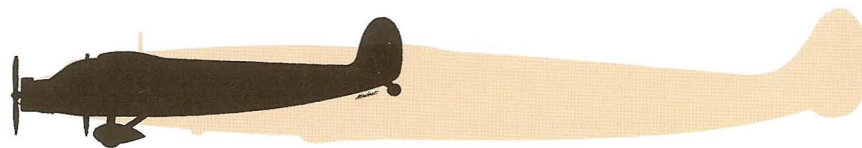
## STINSON SM 6000 TRI-MOTOR

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
9	NC 974W	5005	15 Feb 33	Sold Aug 33 to National
10	NC 975W	5006	"	Sold Aug 33 Airways
11	NC 976W	5007	"	Sold Feb 34 (Boston-Maine)
12	NC 977W	5008	"	Sold Mar 35
14	NC 978W	5009	"	Sold Aug 33 to National
15	NC 429Y	5011	"	Sold Feb 34 Airways (Boston-Maine)
16	NC 475Y	5012	"	Sold Mar 35 to Franklin & Baker (National Airlines, Florida)
17	NC 10807	5029	"	
18	NC 10808	5030	"	Sold Feb 35 to Chicago & Southern

Last two aircraft were SM 6000B. Fleet acquired by Eastern with acquisition of Ludington (there was no Fleet No. 13).



## Size comparison with the L 1049G (p.53)



Right Photo: This Ludington Stinson is pictured at Washington's Hoover Field (on land now occupied by the Pentagon). The Stinson is complimented by the description as an air-liner—an early use of the word. In the early 1930s, passengers did not have to walk far to get on board.

Left Photo: One of the airplanes at Washington Airport.





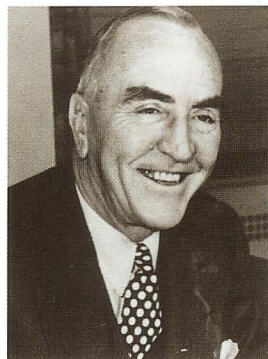
# Eastern Air Lines

President Roosevelt cancelled all the air mail contracts at 4 p.m. on 9 February 1934. He had done so on the advice mainly of Karl Crowley, solicitor to **Postmaster General James Farley**, who had taken over from the Republican **Walter F. Brown**. The latter had laid the foundations of the United States airline system by recognizing the adolescent industry as a national, rather than a regional or local asset to the country. He had, by manipulating a system of selective mail route allocations, created three transcontinental trunk routes, linked by several north-south cross connectors. This was a master plan, but some of the smaller airlines (many of which had sold out to the surviving trunk operators) claimed unfair discrimination. What became known as **The Air Mail Scandal** ensued, when their protests were accepted and Farley took action.

The President asked **General Benjamin Foulois**, Chief of the Army Air Corps, if his organization could step in and carry the mail. He could hardly have refused, even though he must have known that his pilots were not trained for that kind of work, and that his aircraft were unsuitable. Added to this technical and operational inadequacy was the incidence of the worst weather conditions in the Rocky Mountain region for the last 50 years. The result was disastrous. Eleven pilots were killed, and although nine of these were on training flights, the opponents of the cancellation measure had a field day. Charles Lindbergh condemned Roosevelt's action, and Eddie Rickenbacker described it as "legalized murder."

Roosevelt was quick to recognize the political danger. On 30 March 1934, new bids were invited for the coveted air mail routes. The Air Corps continued to maintain the service—with commendable success, as its pilots gained experience and the weather improved—until 1 June. Then the former airlines substantially took over the same network, with only a few changes, that Walter Brown had fashioned.

Eastern Air Transport did well. It had to change its name to **Eastern Air Lines**, to comply with the terms of the new contracts, but it gained new strength. It not only retained the Gravy Run from the Northeast to Florida, direct and via Atlanta; it was the successful bidder for routes from Chicago (thus tapping the Great Lakes area) to Florida; and it gained an extension of its Route 5 to New Orleans. By the time the



**Capt. E. V. "Eddie" Rickenbacker** was a completely different personality to Brown, whom he would have regarded as a dull bureaucrat. An aviation hero of the Western Front in the Great War of 1914–18 (the famous 94th Aero Squadron) he was flamboyant and confrontational. He was named General Manager of Eastern when North American Aviation took over the assets of Eastern Air Transport, which was the operating trade name of the parent company.



**Walter Folger Brown**, a lawyer from Toledo, Ohio, was President Hoover's Postmaster General who realized that the United States airlines were an uncoordinated collection of mainly regional routes. Using his authority to control the mail contracts on which they all depended, he organized a cohesive national system. He can take credit for establishing the U.S. airline industry as a powerful mode of transport, and one that would soon lead to global dominance.

**Black-McKellar Air Mail Act** of 1934 became law on 12 June, Eastern was in control of all the main routes east of the Mississippi, except from the Northeast to the Great Lakes, and it was poised to take its place as one of the Big Four airlines of the United States.

Only four years previously, Eastern had only just begun passenger service, to take advantage of the new opportunities offered by Walter Brown's legislation that encouraged the use of larger aircraft so as to take the airlines into wider horizons than simply carrying the mail. The Pitcairn Mailwings were soon replaced by the revolutionary Douglas DC-2 (see opposite page) and that sturdy mailplane flew its last service on 16 October 1935. A new era had begun.

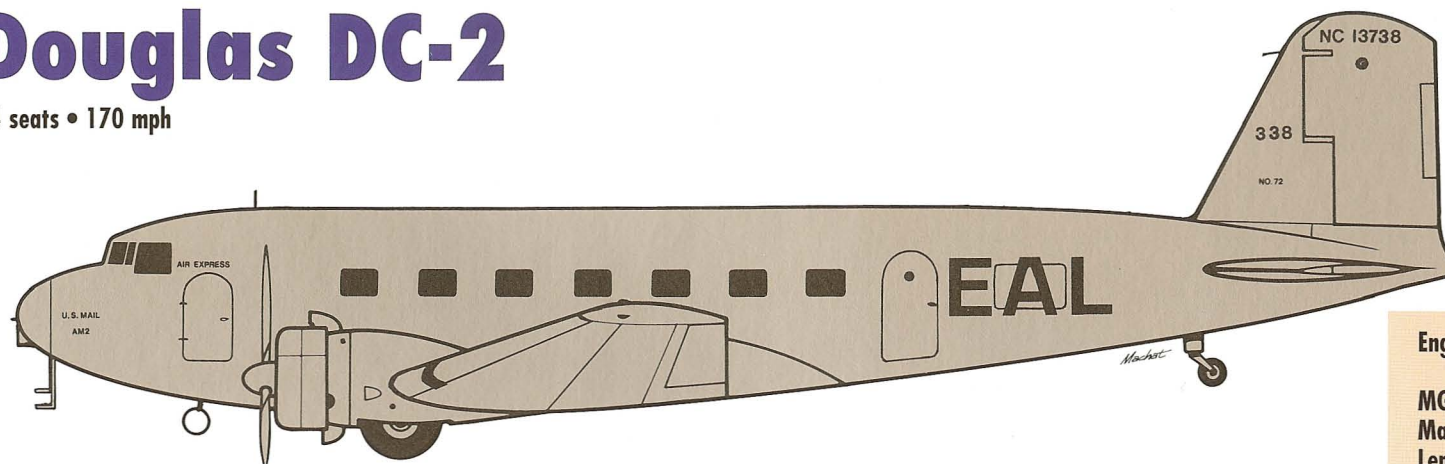
In addition to the highly lucrative route from the Northeast direct to Florida, Eastern established an operational hub at Atlanta. This soon became an aerial crossroads and the Georgian capital's airport was eventually to rank as one of the busiest (and in some years the busiest) in the world.





# Douglas DC-2

14 seats • 170 mph



The **Boeing** company had, in 1933, launched the revolutionary 10-seat **Model 247**. With its semi-monocoque fuselage, stressed-skin construction, its two engines faired into the wing design, and other refinements, its 160-mph speed excelled that of the 100-mph Ford to the extent that historians would judge it to be the world's first "modern" airliner. It went into service with the Boeing-associated United Air Lines on 30 March 1933, and in a misjudged decision, Boeing would not release any 247s to other airlines.

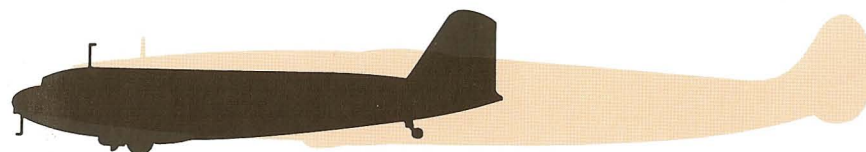
T.W.A.'s Jack Frye was incensed and circulated a specification for a better airliner to five other manufacturers. The rest is history. **Douglas** won the competition with its 12-seat **DC-1** design, quickly modified to the 14-seat **DC-2**. Its fuselage was bigger and, compared with the 247, far more comfortable, as the main wing spar went underneath the cabin floor, not through it. It went into service with T.W.A. on 1 August 1934, but Eastern was not far behind, on 19 November. With this aircraft, Rickenbacker launched The **Great Silver Fleet** slogan, one which became familiar to the public as the epitome of sophisticated air travel in the United States.

The year 1934 saw the introduction of two great airliners that revolutionized the airline industry. One was the Sikorsky S-42 flying boat, which enabled Pan American Airways to survey the oceans. Hitherto Eastern had struggled with inadequate flying equipment, and all the U.S. domestic airlines were also handicapped. The Ford Tri-Motors took off at 90, cruised at 90, and landed at 90. They were noisy, and could not carry a full load for more than a few hundred miles. Then came the Douglas twin-engine air liners, and the air transport industry suddenly found itself with the right tool to do the job.

*Artist's Note: When introduced into Eastern service in 1935, the Great Silver Fleet slogan was well directed. The gleaming metal must have been eye catching at the drab airfields of the 1930s*



Size comparison with the L 1049G (p.53)



## Engines

## Wright Cyclone

710 hp (x 2)

## MGTO

18,200 lb.

## Max. Range

800 miles

## Length

62 feet

## Span

85 feet

## DOUGLAS DC-2

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
321	NC 13731	1257	6 Jan 35	Sold Jan 41
322	NC 13732	1258	"	Crashed 19 Dec 36, Port Jervis, NY
323	NC 13733	1259	"	Sold Oct 40 to RAAF
324	NC 13734	1260	30 Nov 34	Crashed 18 Feb 37, Atlanta
325	NC 13735	1261	31 Oct 34	Crashed 18 Oct 38, Montgomery
326	NC 13736	1286	"	Sold Sep 40
327	NC 13737	1287	"	Sold Oct 40 to RAAF
328	NC 13738	1288	30 Nov 34	Sold Dec 40
329	NC 13739	1289	"	Crashed 10 Aug 37, Daytona Beach
330	NC 13740	1290	"	Sold Dec 40
331	NC 13781	1291	6 Dec 34	Sold Nov 40
332	NC 13782	1292	10 Dec 34	Sold Dec 40 to RAAF
333	NC 14969	1372	31 Dec 35	Sold Jan 41
334	NC 14970	1373	6 Dec 35	Sold Jan 41

NC 13739, which crashed at Daytona Beach on 10 August 37, was Eastern's first fatal accident.

In preparation for the technical upgrading of Eastern's flying crew, from the pedestrian Condors to the sprightly DC-2s, the airline acquired two Stinson aircraft, for instrument training. The Stinson U had a Wright Cyclone engine, the same as the DC-2's.

## STINSON U

Regn.	MSN No.	Date of First Service	Remarks and Disposal
NC12129	9014	Nov 32	Sold 34

## STINSON SR-9D RELIANT

Regn.	MSN No.	Date of First Service	Remarks and Disposal
NC17114	5220	Mar	Used for training thru' 1948



# The Eastern Flyers

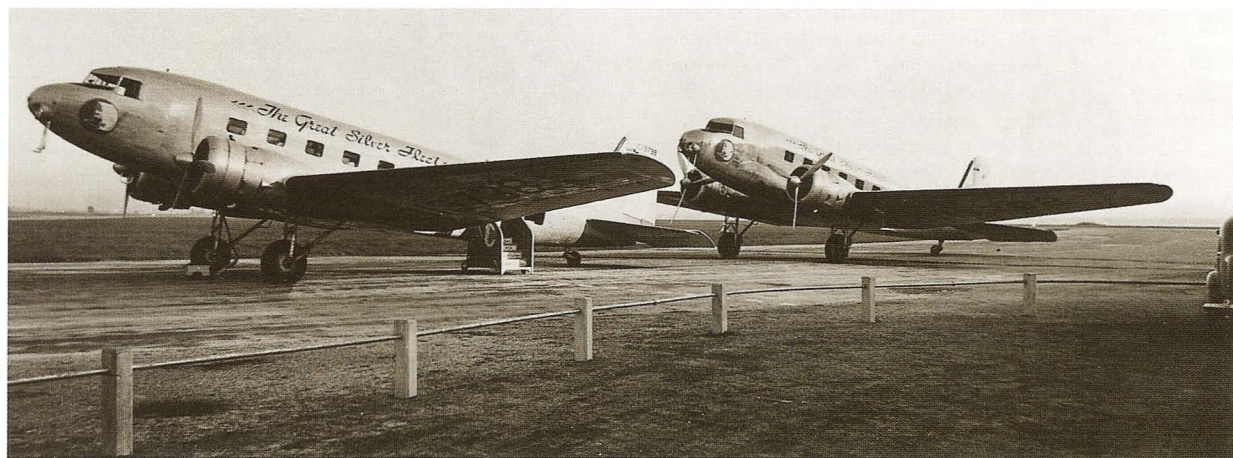


## The Beginning of a New Era

The introduction of the faster Douglas DC-2s enabled Eastern to cut the scheduled time from the Northeast to Florida. Seen in this publicity picture is Eddie Rickenbacker (left) at the launch of the "Dawn to Dusk" schedule. In 1934, to reach Miami in a day from New York, instead of a dreary and sleepless overnight flight, was considered to be really flying,



*The southbound schedule was called the Florida Flyer and the northbound was the New York Flyer. The Douglas DC-2s also had room for baggage and express packages.*



*These two Douglas DC-2s were among the first to carry The Great Silver Fleet slogan. Compared to the Curtiss Condors (see pages, 20, 24, 25) they were a technical generation apart. (Courtesy: Bill Hirsch)*

*With the Douglas DC-2s, bigger and faster than all previous transport airplanes, Eastern Air Lines introduced its famous Great Silver Fleet.*



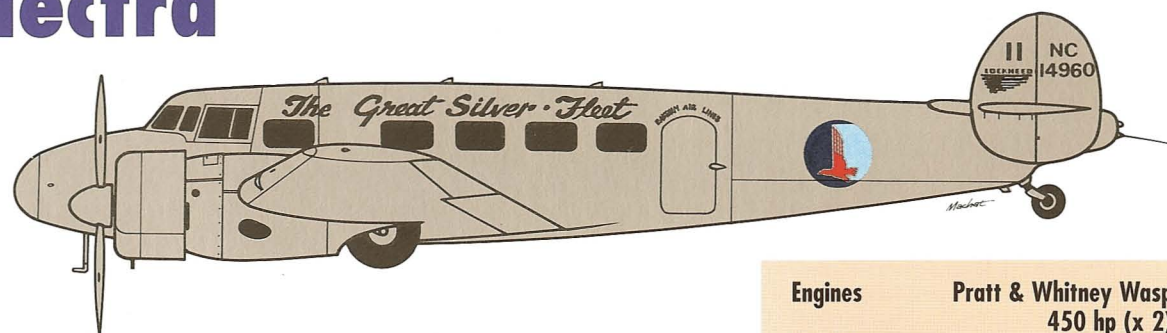
# Lockheed L-10 Electra

10 seats • 190 mph

While the 14-seat Douglas DC-2 marked a great stride in the technical development of the modern airliner, it was, by the standards of the mid-1930s, too large for the passenger traffic demand on many routes that did not serve the large cities. Eastern met this problem by acquiring a few Lockheed Model 10 Electras, which had 10 seats and were just as fast. It had first gone into service on 11 August 1934 with Northwest Airlines, whose level of traffic in the north central states matched this aircraft more closely.

Eastern's traffic environment, however, was different. The population density in the east was far greater, the cities were bigger, and the burgeoning winter vacation traffic to Florida also levelled out the seasonality problem that handicapped most airlines, when traffic in winter habitually fell off. Such was the growth that, within two years, the airline was able to dispense with the Electras and standardize on its fleet of Douglas DC-2s, augmented by the larger 21-seat DC-3s.

By a sad coincidence, Eastern sold its first Electra at the same time when, flying her own Lockheed L-10, fitted with extra fuel tanks, Amelia Earhart and Fred Noonan disappeared without trace in the Pacific Ocean.

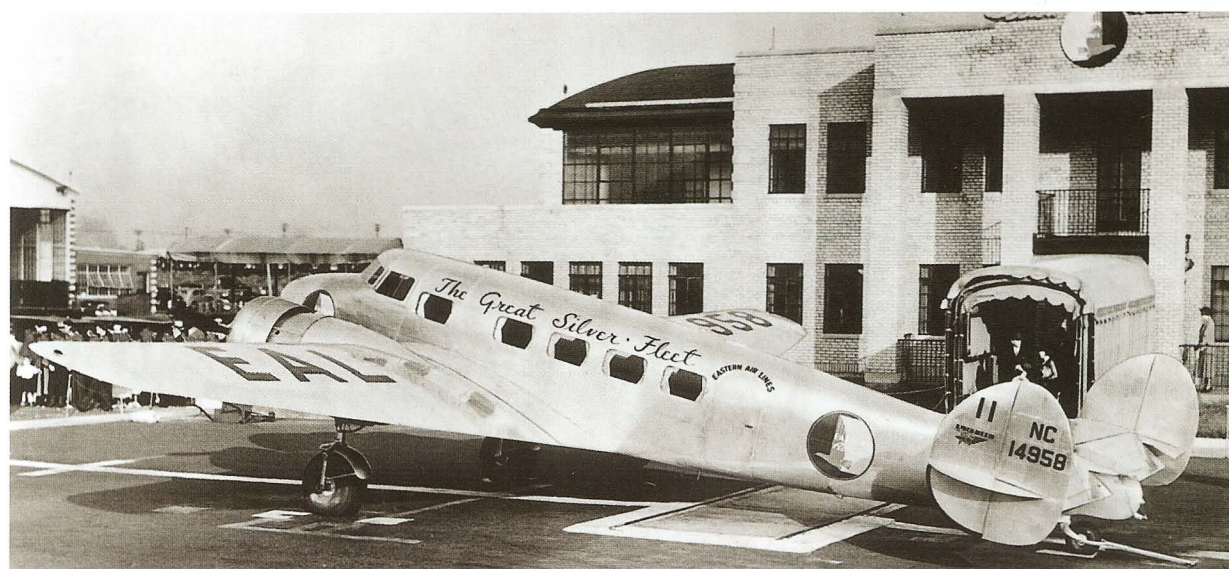


*Artist's Note: Note that, as yet, none of the three airliner manufacturers (Douglas, pages 29 and 33, Boeing, with the Model 247, or Lockheed, portrayed here) was able to incorporate fully-retractable landing gears*



<b>Engines</b>	Pratt & Whitney Wasp
	450 hp (x 2)
<b>MGTOW</b>	10,300 lb.
<b>Max. Range</b>	800 miles
<b>Length</b>	38 feet
<b>Span</b>	55 feet

Size comparison with the L 1049G (p.53)



*Eastern's first Lockheed Electra was a worthy partner to its contemporary DC-2, and could also justify its place as part of The Great Silver Fleet.*

## LOCKHEED 10-B ELECTRA

Fleet No.	Regn.	MSN	Date of First Service	Disposal
11	NC 14958	1036	19 Sep 35	Sold July 37 to Northwest Airlines
12	NC 14959	1037	24 Sep 35	Sold July 37 to Boston-Maine
14	NC 14960	1038	29 Sep 35	Sold Aug 37 to Delta Air Lines
15	NC 14961	1039	4 Oct 35	Sold Sep 37 to Northern Air Lines
16	NC 14962	1040	9 Oct 35	Sold July 37 to Chicago & Southern



*This picture of Eastern's last Electra was taken at Camden County Airport, New Jersey, which, during the 1930s, served Philadelphia, across the Delaware River.*



# The Great Silver (DC-3) Fleet

## DOUGLAS DC-3 (Pre-War Deliveries)

Fleet No.	Regn. No.	MSN	Date of First Service	Remarks and Disposal
335	NC16094	1915	18 Dec 36	Sold July 41, to PAA-Africa Oct 41
336	NC16095	1916	22 Dec 36	Sold March 42, to TWA
337	NC16081	1948	10 May 37	Impressed 8 Jun 42 as C-49G
338	NC16082	1949	13 May 37	Sold July 41, to PAA-Africa Oct 41
339	NC16083	1971	8 Aug 37	Impressed 8 Jun 42 as C-49G; Repurchased 14 Dec 44; sold 7 Feb 53
340	NC18120	1996	23 Oct 37	Impressed 8 Jun 42 as C-49G; Repurchased 22 Jun 44; sold 31 Mar 53
341	NC18121	1997	28 Oct 37	Impressed 8 Jun 42 as C-49G; Repurchased 2 Sep 44; sold 10 Mar 53
342	NC18122	1998	5 Nov 37	Impressed 8 Jun 42 as C-49G; Repurchased 26 Oct 44; sold 3 Feb 53
343	NC18123	1999	3 Dec 37	Impressed Jun 42 as C-49G; Repurchased 9 Dec 44; crashed 30 Dec 45, La Guardia
344	NC18124	2000	7 Dec 37	Removed from service 31 Jan 53 (56,476 flying hours) to NASM
345	NC21743	2102	9 Feb 39	Sold 27 Mar 50 to Arthur Godfrey
346	NC21744	2108	18 Feb 39	Removed from service 3 Nov 52 (53,346 flying hours); sold 16 Jan 53
347	NC21729	2141	17 Jun 39	Sold 12 Jun 52 to Purdue Aeronautics
348	NC21727	2143	15 Aug 39	Crashed 3 Apr 41, Vero Beach, Florida
349	NC21728	2144	19 Aug 39	Sold Feb 52 to Wisconsin Central
353	NC25646	2234	5 Jun 40	Sold 6 Mar 53 to Trans-Texas
354	NC25647	2235	8 Jun 40	Mid-air collision with USAAF A26, Florence, SC
355	NC25648	2236	13 Jun 40	Sold 10 Mar 53
356	NC15595	2246	12 Sep 40	To USAAF Apr 42, crashed 22 Sep 42
357	NC15596	2247	14 Sep 40	To USAAF Apr 42-May 44, sold 9 May 52
358	NC15597	2257	17 Sep 40	To USAAF Apr 42-Jul 44, sold 31 Mar 53
359	NC15598	2258	20 Sep 40	To USAAF Apr 42-Jul 44, sold Feb 52
360	NC15599	2259	21 Sep 40	To USAAF Apr 42-Jun 44, sold Feb 53
361	NC19963	2260	25 Sep 40	To USAAF May 42, mid-air collision with Navy F6F, 30 Jul 49, Chesterfield, NJ
364	NC28391	2268	12 Oct 40	Sold 2 Mar 53
365	NC28392	2269	17 Oct 40	Sold 17 Mar 53
366	NC19968	3252	24 Oct 40	Sold 31 Mar 53
367	NC19969	3253	23 Oct 40	Sold 31 Mar 53
368	NC19970	3254	30 Oct 40	Crashed 18 Jan 46, Cheshire, CT
369	NC28381	4089	6 Feb 41	To USAAF May 42-Dec 43, sold 22 Jul 52
370	NC28382	4090	7 Feb 41	To USAAF May 42-Dec 43 sold 13 Oct 52
371	NC28383	4091	12 Feb 41	To USAAF May 42 as C-49D
372	NC28384	4092	12 Feb 41	Crashed Oxon Hill, Maryland, 13 Jan 48
373	NC28385	4093	14 Feb 41	Sold 20 Oct 52 to Purdue Aeronautics
374	NC33631	4137	10 Sep 41	Crashed Florence, SC, 7 Sep 45
375	NC33632	4138	11 Sep 41	Sold 24 Nov 52 to Purdue Aeronautics
376	NC33633	4139	16 Sep 41	Sold 10 Nov 52
377	NC33634	4140	17 Sep 41	Sold 31 Mar 53

## DOUGLAS C-47A (Military DC-3) Both planes all-cargo.

Fleet No.	Regn. No.	MSN	Date of First Service	Remarks and Disposal
601	NC88809	20058	15 Jan 47	Sold Jan 57 to World Wide Airways
602	NC88808	20137	11 Dec 46	Sold 1 Oct 52 to Leeward Aircraft

The following were intended for Eastern but diverted to USAAF:  
 NC28386 to NC28390 (MSNs 4094-4098) (see above)  
 NC30029 to NC30039 (MSNs 6331-6341)  
 NC33630 (MSN 4136); NC33635 to NC33639 (MSNs 4141-4145)

## DOUGLAS DST

Fleet No.	Regn. No.	MSN	Date of First Service	Remarks and Disposal
501	NC25649	2224	10 Feb 40	Impressed May 42 as C-49F
502	NC25650	2225	16 Feb 40	Impressed May 42 as C-49F
503	NC25651	2226	23 Feb 40	Impressed 8 Jun 42 as C-49F
504	NC28394	3250	11 Oct 40	Crashed, Atlanta, 26 Feb 41
505	NC28393	3251	15 Oct 40	Impressed 8 Jun 42 as C-49F
506	NC33643	4129	27 Jun 41	Impressed 8 Jun 42 as C-49F

Eastern's president, Eddie Rickenbacker, was injured in the NC28394 crash, in which seven people were killed and nine others injured

## DOUGLAS DC-3 (Short Term Leases)

Fleet No.	Regn. No.	MSN	Remarks and Disposal
071	NC16071	1911	Leased from United
072	NC16072	1912	
086	NC16086	1925	
070	NC16070	1910	Leased from TWA
375	NC18949	2013	
939	NC18939	2005	
087	NC16087	1926	Leased from United
088	NC16088	1927	
112	NC18112	1984	
938	NC18938	2004	Leased from American
945	NC18945	2018	
13	NC16013	1551	
42	NC18142	2138	Leased from Western
	NC16060	1900	
	NC19964	2265	

Eastern's traffic on the popular New York-Miami route peaked during the winter months. These leases were mutually convenient to both lessors and lessees.

## DOUGLAS DC-3 (Late War and Post-War Deliveries)

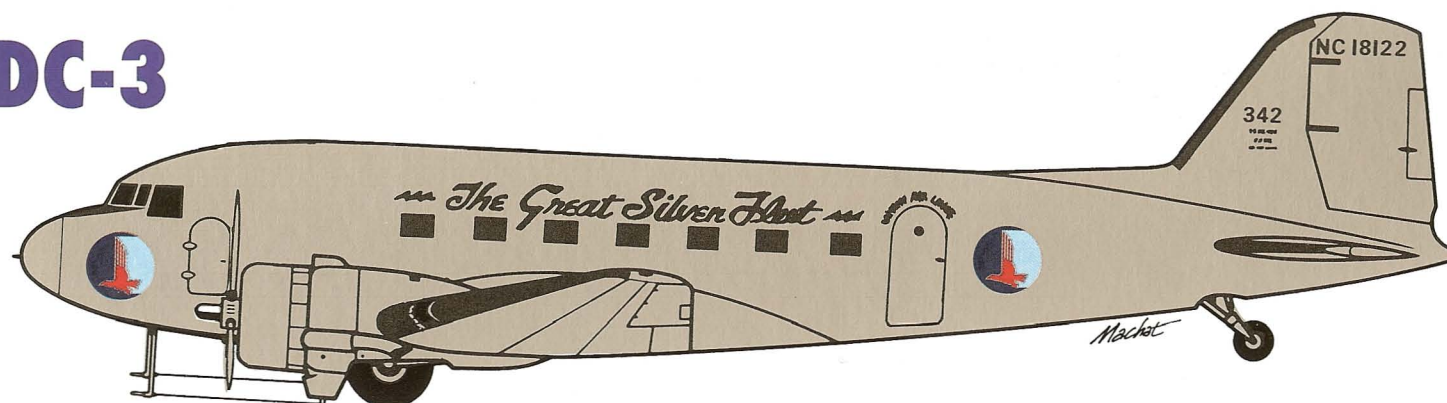
Fleet No.	Regn. No.	MSN	Date of First Service	Remarks and Disposal
351	NC25650	2225	30 Oct 44	Ex DST No 502, sold Apr 52
352	NC25651	2226	7 Dec 44	Ex DST No 503, sold 2 Mar 53 to Leeward Aircraft
378	NC33643	4129	16 Dec 44	Ex DST No 506. Leased from USAAF for cargo; passenger service 1 May 45; sold 3 Jul 50
379	NC19134	4985	17 Mar 45	Used from USAAF for cargo; passenger service 17 Dec 45; bght 31 Aug 49; sold 19 May 52
380	NC19193	6325	17 Apr 45	Used from USAAF; passenger service, 20 Nov 45; bght 31 Aug 49; sold 18 Aug 52 to Frontier
381	NC18916	6323	28 May 45	Used from USAAF; passenger service 31 Oct 45; bght 31 Aug 49; sold 8 Apr 52
382	NC15567	6342	8 Jul 45	Used from USAAF; bght 31 Aug 49; sold 29 Feb 52
383	NC15570	6320	20 Jun 45	Leased from USAAF; bought 31 Aug 49; sold 6 Jun 52 to Glenn L Martin Co
384	NC18196	6326	21 Jul 45	Leased from USAAF; bought 31 Aug 49; sold 23 Apr 52 to Purdue Aeronautics
385	NC12945	6338	1 Sep 45	Leased from USAAF; bought 31 Aug 49; sold 6 May 52 to Purdue Aeronautics
386	NC12954	4996	17 Sep 45	Leased from USAAF; bought 31 Aug 49; Sold Aug 52 to Purdue Aeronautics
387	NC12978	4983	26 Sep 45	Leased from USAAF; bought 31 Aug 49; sold 15 Sep 52 to Purdue Aeronautics
388	NC44792	6314	14 Oct 45	Leased from USAAF; bought 31 Aug 49; sold 7 Oct 52 to Purdue Aeronautics
389	NC15773	4982	25 Oct 45	Leased from USAAF; bought 31 Aug 49; sold 4 Jan 53 to Purdue Aeronautics
390	NC45331	7323	9 Nov 45	Sold 9 Dec 52 to Purdue Aeronautics
391	NC45332	11693	23 Nov 45	Bought 31 Aug 49; sold 24 Mar 52 to LB Smith
392	NC45369	11742	9 Dec 45	Bought 1 Aug 49; sold 10 May 52 to LB Smith
393	NC45381	11687	15 Dec 45	Bought 31 Aug 49; sold 27 June 52 to LB Smith
394	NC86569	4937	22 Dec 4	Leased from USAAF; bought 31 Aug 49; sold 30 Oct 52 to LB Smith
320	NC88871	6313	13 May 46	Bought 31 Aug 49; sold 8 Apr 52
395	NC86584	4935	17 Jan 46	Leased USAAF; bought 31 Aug 49; sold 29 Aug to LB Smith
396	NC86597	11627	8 Feb 46	Sold 17 June 52
397	NC88872	3274	23 Jan 46	Crashed near Galax, Virginia, 12 Jan 47
398	NC86562	11761	10 Jan 46	Bought 1 Aug 49, sold May 52 to LB Smith
399	NC54406	4095	22 Mar 46	(NC28387 for 1941 delivery ntu) Sold 11 Nov 52





# Douglas DC-3

21 seats • 165 mph

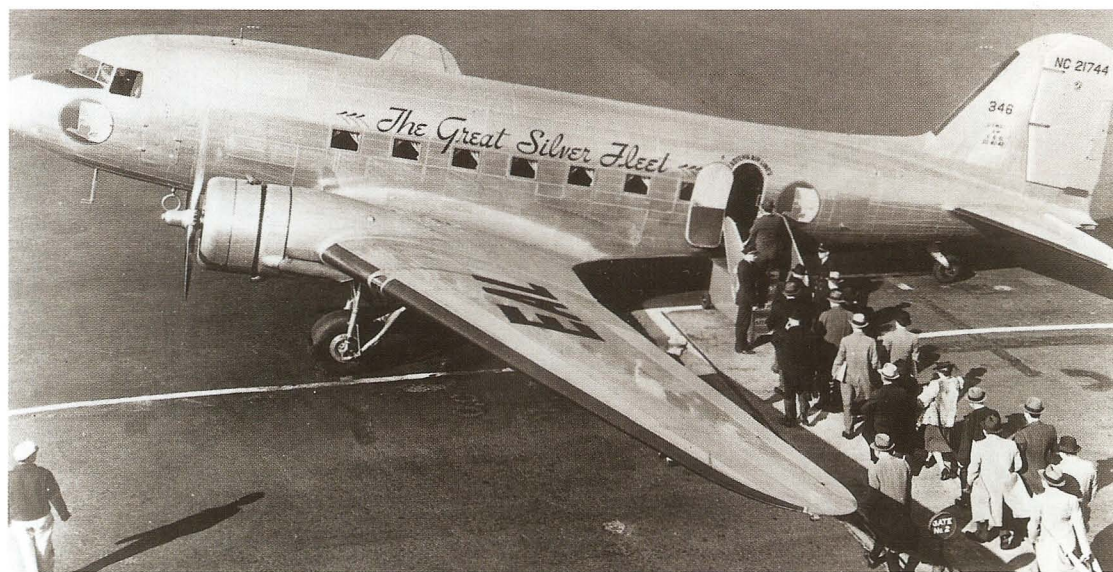


The Douglas DC-3 was developed from the DC-2 by widening the fuselage to permit 3-abreast instead of 2. This improvement, initiated by American Airlines, was introduced in its DST (Douglas Sleeper Transport) version on that airline's New York–Chicago route on 25 June 1936. This was an historic date, as the extra seating—at only a marginal increase in the operating costs—enabled airlines to reduce considerably their dependence on mail payments. The aircraft quickly superseded the DC-2 as the chosen fleet flagships. More than 800 were built, and about 11,000 military versions were one of the most valuable assets of the U.S. armed forces during the Second

World War. More than 400 were built under license in Japan, and more than 6,000, as the Lisunov Li-2, in the Soviet Union. Such was the DC-3's ruggedness and durability that several scores survive today in airworthy condition, and some are still earning their keep.

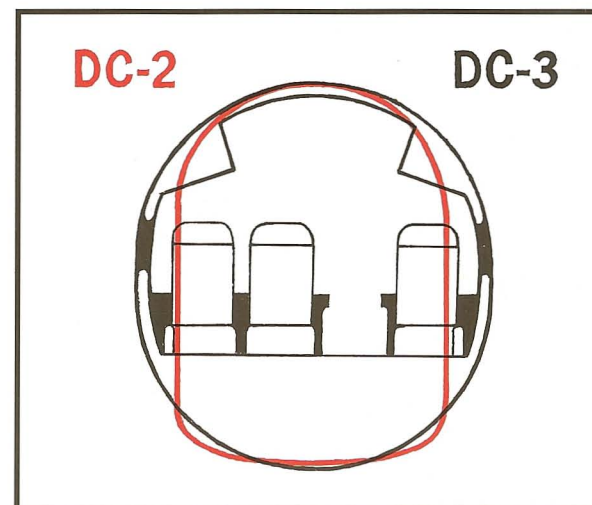
Eastern introduced DC-3 service on 18 December 1936—just in time for Christmas. It eventually had about 90 DC-3s, DSTs, and various military variants converted for commercial use. Although the slogan had been reintroduced with the DC-2s and Electras, these “Gooney Birds” comprised the majority of The Great Silver Fleet.

Engines	Pratt & Whitney Double Wasp
	1,200 hp (x 2)
MGTOW	24,400 lb.
Max. Range	1,000 miles
Length	64 feet
Span	95 feet



This was a typical scene at LaGuardia Airport in the late 1930s. This particular aircraft, Fleet No. 346, NC 21744, was not Eastern's high-time DC-3. Nevertheless, it clocked up 53,476 flying hours between 18 February 1939 and 3 November 1952, averaging about 4,000 flying hours per year, or about 11 hours every single day. The DC-3 was a real workhorse.

For comparison with Lockheed L-1049G, see p.29 (DC-3 was two feet longer than DC-2)

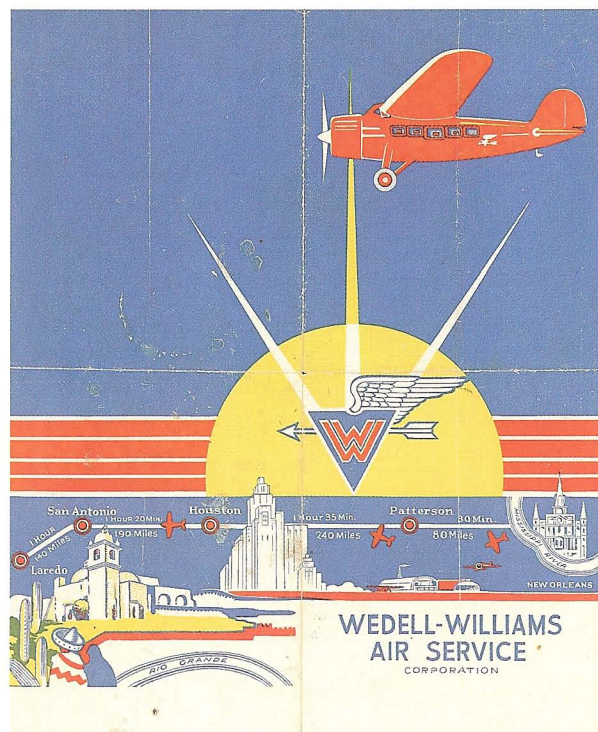




# Wedell-Williams Air Service

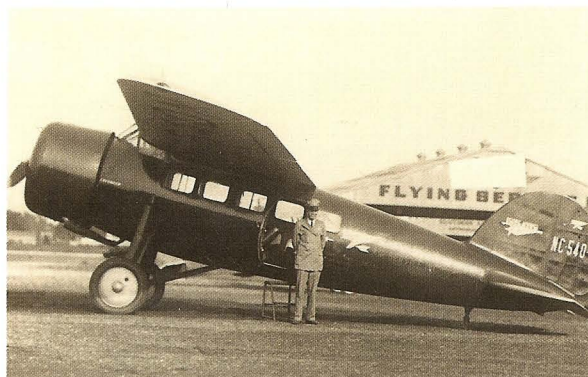
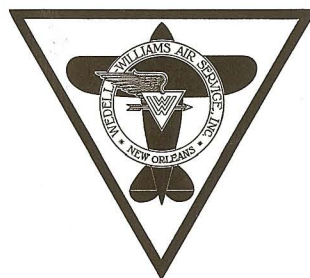


Jim Wedell waves from the cockpit of one of the Wedell-Williams Vegas. (photo: Allen Wiltz Collection)



The **Wedell-Williams Air Service** was born on 11 May 1929 through a partnership between **Jimmy Wedell**, who had become a well-known racing pilot, and **Harry P. Williams**, a wealthy Louisiana lumberman, reputedly worth \$2 million—a tidy sum in those days. At first using Ryan aircraft, the partnership began a passenger air service on 30 November 1929 (see map).

Without any mail revenue, the finances were provided by Williams, and the airline acquired two **Lockheed Vegas** (see page 35) to promote speed against the slower aircraft of the competitors in the area. An opportunity arose for a merger with the Robertson brothers, based in St. Louis, for a route to Chicago; but procrastination in effecting an agreement opened the door for American Airways, to gain the coveted mail contract.

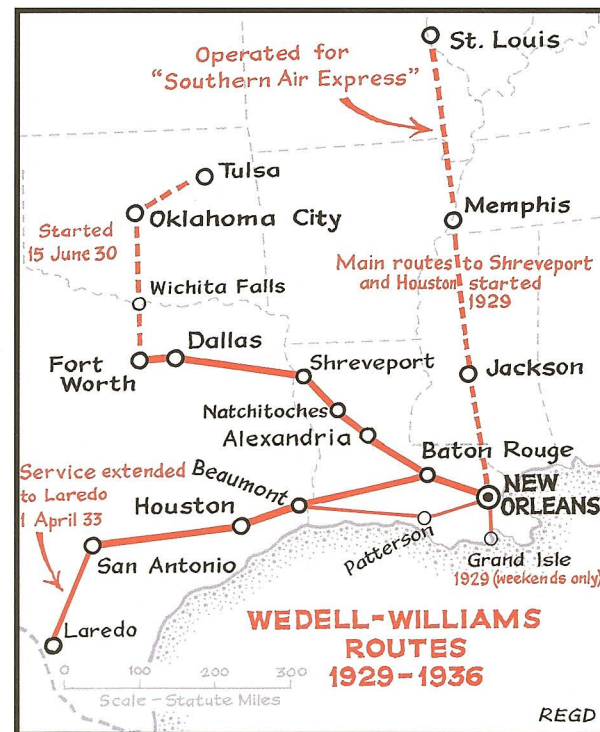


One of the Wedell-Williams Lockheed Vegas at Houston's Hobby Airport in 1931. (photo: Allen Wiltz Collection)

On 15 June 1930, the Dallas route was extended to Oklahoma City and Tulsa, connecting with the **SAFEway** airline; and on 1 April 1933, the Houston route was extended to Laredo, via San Antonio. But without the mail contract, the airline could not keep afloat, and it ceased operations in August 1933.

With the redistribution of routes under the Democrats in May 1934, after the "Air Mail Scandals" there was little hope for Wedell-Williams, as Harry Williams had been a friendly supporter of the local politician Huey Long, who had opposed Franklin Roosevelt in a bid for the presidency. Furthermore, and tragically, Wedell was killed while testing a de Havilland Gipsy Moth on 24 June 1934; his brother was killed in a crash in June 1935; Huey Long was assassinated in September 1935; and Williams himself was killed, along with chief pilot John Worthen on 19 May 1936.

Now renamed, (to comply with the new regulations) Wedell-Williams Air Lines was sold to Eastern Air Lines (also renamed) on 1 December 1936. Eddie Rickenbacker now had a direct route all the way from the Northeast to Texas and the Mexican frontier.



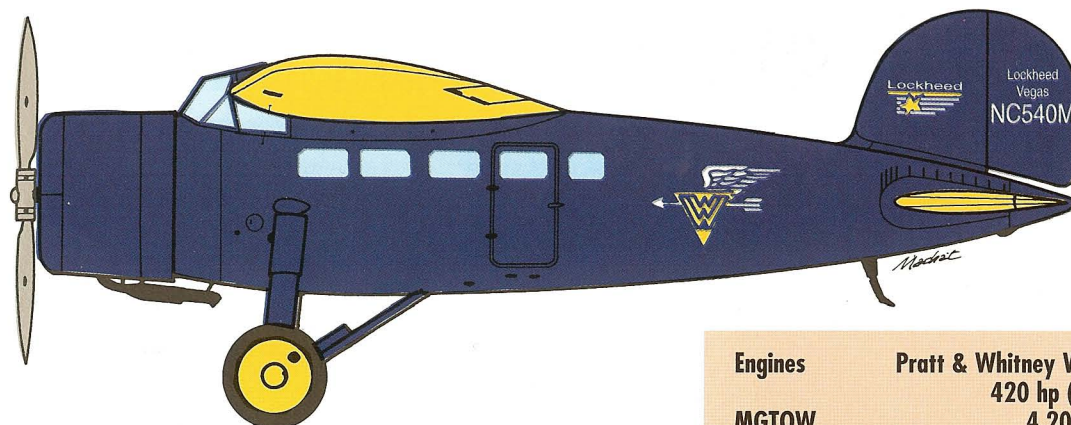


# Lockheed Vega

6 seats • 150 mph

In the late 1920s, speed was a highly desirable element of aviation appeal. Speed records always hit the headlines, and air races were popular annual events. But transport aircraft were usually slow by comparison. When Wedell-Williams ventured into the airline arena, it tried to sell speed, using the 150-mph **Lockheed Vega**, designed by **John K. Northrop**. Built of wood, on a metal-frame base, it derived its speed by its clean aerodynamics. Carrying 6 passengers, and selling relatively cheaply at \$17,500, it could, traffic permitting, produce seat-mile costs on a par with the 14-seat, 100 mph Ford Tri-Motors.

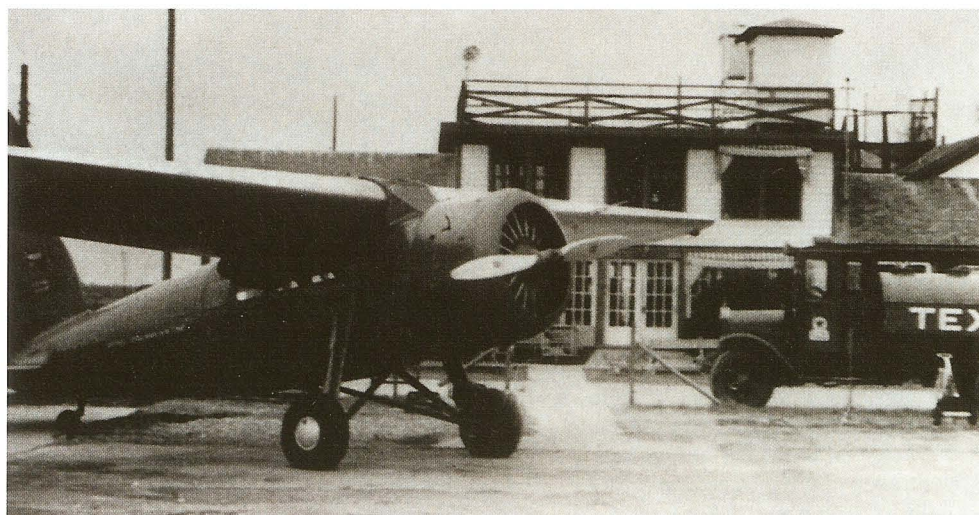
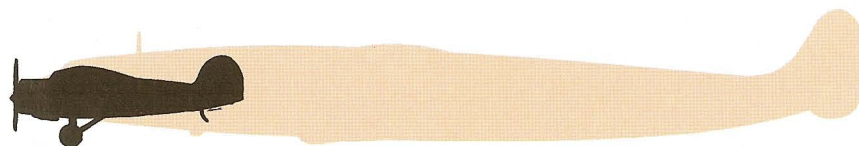
Several airlines, notably Bowen and Braniff, both serving Texas, vigorously promoted the speed of the Vegas with slogans such as "Fly Past the Air Mail." But this was not enough. The problem was that too often the traffic was insufficient on a consistent basis to earn enough revenue to cover the operating costs. After the so-called Air Mail Scandals of 1934, the new regulations covering air transport operations required, in the interests of safety, twin-engined aircraft. And so the days of otherwise fine aircraft such as the Northrop types and the single-engined Lockheed Vegas and Orions were numbered.



<b>Engines</b>	<b>Pratt &amp; Whitney Wasp</b>
	420 hp (x 1)
<b>MGTOW</b>	4,200 lb.
<b>Max. Range</b>	600 miles
<b>Length</b>	27 feet
<b>Span</b>	41 feet



Size comparison with the L 1049G (p.53)



*This rare picture of a Wedell-Williams Lockheed Vega was taken at Houston's first airport in 1929. (photo: courtesy Houston Airport System)*



## EASTERN'S LOCKHEED VEGAS

Regn.	Fleet No.	Date of First Service	Remarks and Disposal
NC 197E	38	31 Dec 36	Sold 37
NC 104W	121	31 Dec 36	Sold 38

These aircraft acquired with the purchase of the Wedell-Williams Transport Corporation



# Eastern Consolidation

As related on previous pages, Eastern Air Lines did well out of the redistribution of routes from the 1934 Air Mail Scandals, the 1936 acquisition of Wedell-Williams, and the arrival on the scene in 1936 of the epoch-making Douglas DC-3. Postmaster-General Farley added the populous Great Lakes region to the Florida winter-vacation seeking public; Wedell Williams gave access to oil-rich Houston, one of the fastest-growing cities in the U.S.A.; and the DC-3, if not making consistent profits without mail payments (as claimed by American's C. R. Smith), at least came close.

The new Air Mail Act of 1934 had become law on 12 June 1934, and the new air mail postage rate was set on 1 July at 6¢ per ounce. To regain public confidence, experimental excursion fares were introduced on the Atlanta Route 5 on 20 July of that year at a competitive 4¢ per mile; and on 15 August, regular passengers could buy scrip books for \$2.50, which gave a 15% discount. As previously noted, 3-stop New York-Miami service started on 19 November, and passenger service began, Chicago-Miami, on 20 December.

1934 had truly been an eventful year. On the last day, **North American Aviation, Inc.** took over the assets and operations of Eastern Air Transport, Inc., which was legally dissolved on 28 February 1935. **Eastern Air Lines, Inc.** took over the transport activities of North American. On 1 January 1935, **Eddie Rickenbacker** was named General Manager of Eastern.

As shown on the map, Eastern had become a force to be reckoned with. Because of the density of traffic east of the Mississippi, it may not have had the mileage or the impressive transcontinental routes on its map; but most of its routes were good traffic generators; and, as noted above, it did not suffer from the seasonal fluctuations suffered by the other trunk airlines. Such was the intensity of demand that Eastern Air Lines took its place as one of the "Big Four" U.S. airlines, a status reached in less than a decade from being a night-time-only mail carrier.

On 22 April 1938, North American sold its holdings in Eastern Air Lines, Inc. through a public offering to E.V. "Eddie" Rickenbacker and his associates for \$3,500,000. A new route was added soon afterwards, on 21 June 1938, from Tampa to Memphis; and another foothold on the Mississippi was staked on 25 September 1940 at St. Louis. The most important route addition was the extension of AM 42 from Houston to Brownsville. Together with Miami, Eastern now had, through direct connections with the Pan American "Chosen Instrument," two gateways to South America.



As the United States entered the Second World War, Eastern's hold on most of the airline markets east of the Mississippi was impregnable. Its northeastern cities combined for about 30 million potential passengers, and the Chicago area for another 10 million. In the south, Atlanta had become a major traffic hub, and Florida, New Orleans, and southern Texas, were all secured destinations.



# Pride of the Great Silver Fleet



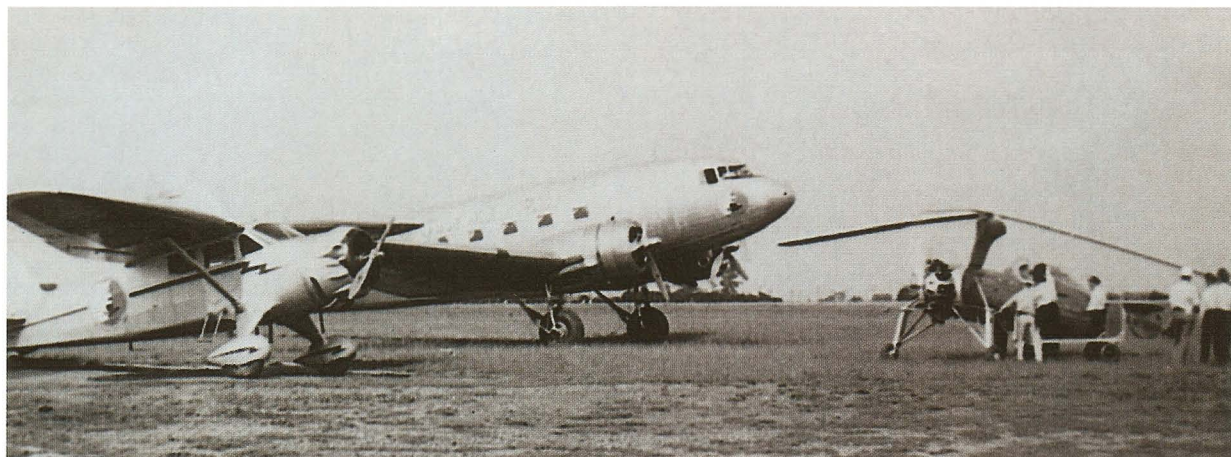
By 1940, the eastern skies of the United States were full of Eastern Airlines DC-3s. The fleet was not as large as American's, but was almost as large as United's or T.W.A.'s. And it was concentrated into a smaller area. In particular, it was offering more than 30 flights a day between New York's two airports (LaGuardia and Newark) and the nation's capital, Washington.



# Silver Fleet Scrapbook



*This picture of DC-3 Fleet No. 340 (NC 18120) was taken at Camden County Airport—Philadelphia's airport at that time—in 1940. Typical of the workhorse DC-3s, it was delivered in October 1937 and was scrapped 33 years later in 1970.*



*This rare picture, also taken at Camden, shows one of The Great Silver Fleet of Eastern's DC-3s along with a Stinson Reliant (used for training) and the Kellett autogyro—see page 39 opposite. (Courtesy: Bill Hirsch)*



*Eastern's DC-3 Fleet No. 373 (NC 28385) poses at New York's new LaGuardia Airport in 1940. In addition to The Great Silver Fleet slogan, it was also named "Silverliner" (just to the right of the passenger door).*



# Kellett KD-1B

Mail Only • 102 mph

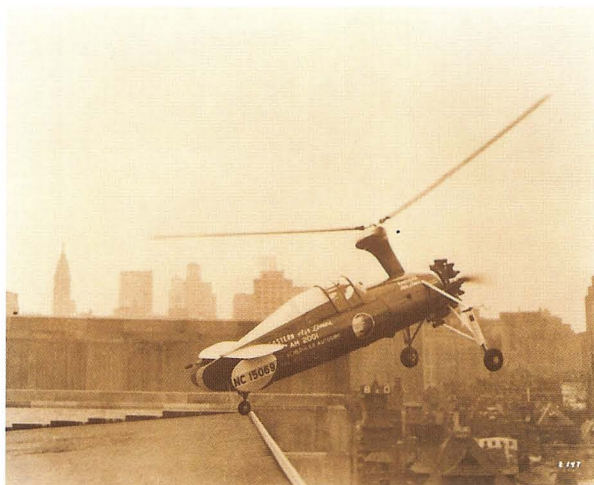
On 6 July 1939, in cooperation with the U.S. Post Office, a Kellett KD-1B autogyro, NC15069, took off from the rooftop of the Philadelphia Post Office at 30th and Market Streets, and delivered mailbags to waiting aircraft at Camden Airport.

Piloted mainly by Capt. John M. Miller, and assisted by Capt. John "Skip" Lukens, the Kelletts flew five round trips every weekday for exactly a year. Each trip on this Experimental Route 2001 took ten minutes, and this was the first rotary-winged scheduled airline service in the world. After six months, the route was transferred to the new Philadelphia Airport, soon to be opened for all airline traffic.

An autogyro begins its take-off conventionally, and the forward motion sets the freely-mounted rotary wings in rotation, thus providing extra lift. The autogyro was superseded by the helicopter, which also had rotary wings, but these are powered, and permit direct vertical take-off without any forward motion.

## KELLETT KD-1B

Regn.	MSN No.	Date of First Service	Remarks and Disposal
NC 15069	101	6 July 39	Service ended July 40



The Kellett autogyro takes off from the Philadelphia Post Office rooftop.

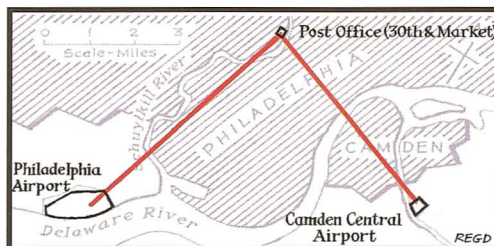


Occasionally a distinguished passenger joined the mail. This was Andre Kostelanets, the famous orchestra conductor, climbing out on the Post Office rooftop.

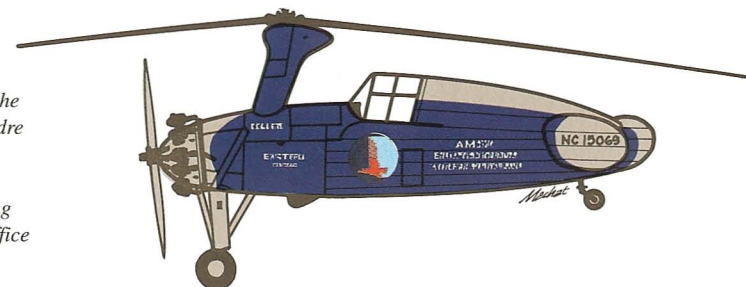
### Engines

MGTOV  
Max. Range  
Length  
Span

Jacobs L-4MA  
245 hp (x 1)  
2,250 lb.  
200 miles  
20 feet  
—



John Miller lands gently at the field at Camden.



Interestingly, Eastern's ancestor, Pitcairn Aviation (page 14) also built autogyros. Pitcairn's and Kellett's were both licensed from the Spanish Cierva inventor.



Captains John Miller and John Lukens check their logbooks.



On display at Philadelphia Airport.



# Call to Arms

On 15 July 1940, Eastern's executive offices were moved to No. 10, Rockefeller Plaza, New York, an up-market address that suited Eddie Rickenbacker very well. By this time, the Second World War had broken out in Europe—although the full consequences of Hitler's aggression were not at first appreciated. But the Dunkirk evacuation and the Battle of Britain changed everything, and the United States became peripherally involved. In September 1940, Eastern Air Lines was alerted to the gathering storm when it sold two DC-2s to the British Purchasing Commission.

The opening of the new Washington National Airport on 16 June 1941 was a stimulant to the Northeast Corridor traffic; but another reminder of the approaching crisis was the sale of two DC-3s to the U.S. Defense Supplies Corporation in the following month. A few more months later, on 7 December, the Japanese attacked Pearl Harbor.

Together with the other trunk airlines, Eastern Air Lines was immediately conscripted to support the war effort. In March 1942, it started two new routes to Miami, from military bases at Middletown, Pennsylvania, and San Antonio, Texas. A survey flight was made southwards from Miami to Trinidad on 1 May; and a daily service began on 18 May. The survey was extended to Natal, Brazil, on 14 June, and service began on 1 July. Eastern's **Military Transport Division (M.T.D.)** was created on 1 September.

Veteran operations and traffic men from the commercial division were sent to the overseas bases and staging points, and by November Eastern was controlling these stations. Then Brazil entered the war, and soon afterwards the U.S. Army took over the air bases in Natal and Belém. The Eastern personnel were given equivalent military rankings, but were not required to wear uniforms. Local workers were hired at 30¢ per day. By this time, the airline was carrying all kinds of supplies: food and materiel southwards; mica, quartz crystals, and natural rubber northwards. It carried aircraft sub-assemblies, brought back captured German equipment and survivors from torpedoed ships. It carried railroad engineers to Iran and specialist sappers to detect land mines for General Montgomery's forces facing Rommel in North Africa.

In October 1942, the M.T.D. accepted its first **Curtiss C-46 Commando**, the fifth off the production line, and it was put to work immediately at Middletown. Within four months,

15 C-46s were in service, and by 17 July 1943, three round trips were being flown every day through to Natal. Unfortunately, the exigencies of war had not allowed the usual exhaustive trials and tests, and a serious problem arose with a faulty hydraulic system. Eastern incurred the wrath of the Army by grounding the aircraft but within two weeks the maintenance crew had identified the problem and corrected it. Like all new aircraft, the C-46 had its teething troubles, and Eastern made more than 300 modifications—a task normally the responsibility of the manufacturer.

The C-46 could carry 10,000 lb. of payload (and was frequently overloaded). This was more than twice as much as the DC-3's; and it went on to perform great work across the notorious India-China trans-Himalayan "Hump."

In September 1943, Eastern C-46s began night flights from Miami to Natal, to increase the logistics volume. Then, on 1 June 1944, the route was extended across the South Atlantic Ocean to Accra, on west Africa's Gold Coast, then a British colony, now Ghana. This 2,700-mile crossing was made possible only by building an airfield on **Ascension Island**, a tiny isolated British island, 1,448 miles from Natal, and 1,356 miles from Accra. The runway was interesting. It had a hump in the middle which obscured the pilots' view when they landed. They were pleased to see the hump, however, after ten or twelve hours of celestial navigation and dead reckoning. They had to hit Ascension first time, as the C-46 fuel load, even with extra tanks, did not allow the luxury of flying a search pattern.





# Curtiss C-46

40 Seats • 170 mph

The last trip to Africa was made on 10 November 1944, and flights to Natal were discontinued on 15 October 1945, when the M.T.D. was disbanded. Eastern Air Lines and its often maligned C-46s had made an important contribution to the communications and supply route for the U.S. and British armed forces in the African and India-China theaters of the Second World War.

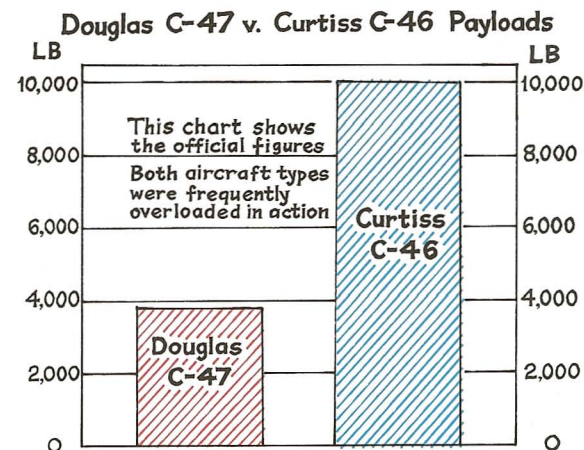


<b>Engines</b>	Pratt & Whitney R-2800
	2,000 hp (x 2)
<b>MGTOW</b>	48,000 lb.
<b>Max. Range</b>	1,200 miles
<b>Length</b>	76 feet
<b>Span</b>	108 feet

Size comparison with the L 1049G (p.53)



Eastern Air Lines ferried squadrons of C-46s to the India-China Theater, via Brazil and Africa. The airline supplied the crews, but the aircraft did not carry any airline identifications.



## THE CURTISS C-46 IN PERSPECTIVE

Aircraft	Dimensions			All-up Weight (lb)	Payload (lb)	Typical Seats	Normal Range
	Length	Span	Height				
DC-3	64'5"	95'0"	16'11"	24,400	3,840	21	1000
C-46	76'4"	108'0"	21'9"	48,000	10,000	50	1200
Convair 240	74'8"	91'9"	26'11"	41,790	9,350	40	1800



# National Challenge

In 1940, Eastern Air Lines, under the confident leadership of **Eddie Rickenbacker**, had consolidated its network which blanketed the area east of the Mississippi and into Texas (see map on page 36). Several short routes were combined to provide through services and new intermediate points were added. Eastern was on hand to open service on 2 April 1940 at New York's new LaGuardia Airport, at Philadelphia's on 20 June 1940, and it was the main operator at Washington's new National Airport when it opened on 16 June 1941.

The equanimity was marred when, on 27 February 1941, a DST crashed at Atlanta. There were some casualties, but this tragedy attracted more than usual attention, as Eddie Rickenbacker himself was on board, and was injured. But more injurious to the airline was a decision by the Civil Aeronautics Board, which, on 19 February 1944, authorized the entry of **National Airlines** on the route from New York to Jacksonville, thus connecting with its rather modest route network mainly in Florida.

National had been operating Lockheed twin-engined Model 18 Lodestars, as the traffic on its routes—what would today be termed as regional, or even commuter levels—did not even justify DC-2s or DC-3s. The route award transformed the airline into trunk status, albeit in the lower strata of the airline ranking table. It also transformed Eastern's situation on what had hitherto been a comfortable monopoly on one of the densest air routes in the U.S.A., and indeed the world. Eddie Rickenbacker was not too pleased, as National's president, **George Baker**, was no push-over, was Eddie's match in confidence and rhetoric, and the two became bitter rivals.

The onset of the Second World War delayed the operational confrontation, but on 14 February 1946, National introduced four-engined Douglas DC-4s, flying non-stop on the New York–Miami route. The Great Silver Fleet's 21-seat 160-mph DC-3s could not match the 44-seat 200-mph DC-4s. Rickenbacker acted promptly. Eastern responded with its own DC-4s on 2 April 1946.

There had been compensations. On 12 June 1944, the C.A.B. had also awarded to Eastern important route authority north of New York to Boston, Washington to St. Louis, and Tampa–Miami. Boston service, in competition with American Airlines and Northeast Airlines, started on 1 November 1944.

But the "Gravy Run" monopoly was broken, and as the U.S. airlines emerged from the austerity of the Second World



*George T. "Ted" Baker, the flamboyant owner of National Airlines, was a thorn in Eddie Rickenbacker's side, especially when he broke Eastern's monopoly of the New York–Miami route in 1944.*

War, Eastern Airlines entered a new world of regulated, but nevertheless stiff competition.

The clash between Eastern's Rickenbacker and National's Baker was more than just a personality conflict or a bitter rivalry between two airlines. The New York–Miami route, epitomizing the northeastern U.S.A.–Florida vacation traffic, was one of the few aerial arteries where the air mail routes planned by Postmaster General Brown in the early 1930s had developed into a channel of passenger traffic that was substantial enough to justify intensive competition. Additionally—unlike New York–Washington, New York–Boston, or Los Angeles–San Francisco, which were short routes (200–400 mile), or even New York–Chicago (800 miles), New York–Miami was 1,100 miles. This was long enough to guarantee profitable operations, as this distance was way down the cost-per-seat-mile v. distance chart. Both Eastern and National fought for supremacy, and both lost out. Neither airline survived, Pan American bought National, while Eastern eventually ceased operations although surviving today as a corporate entity.

## DC-4 FLEET LIST

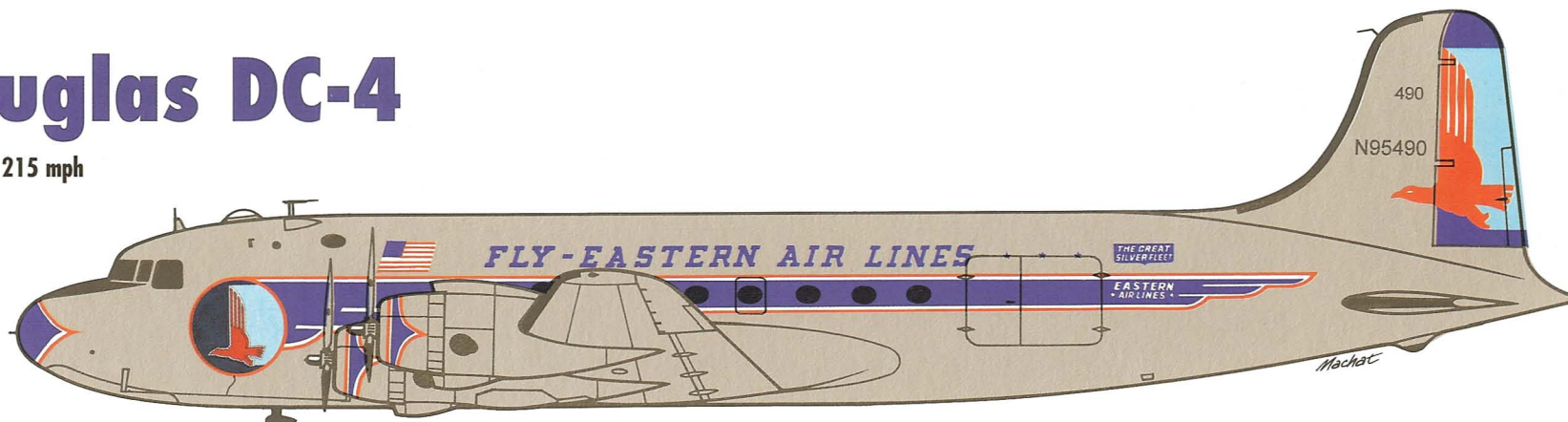
Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal
701	NC86580	10581	13 May 46	Leased from US Govt. to USN 6 Jun 51
702	NC86576	10491	5 May 46	Leased from US Govt. to USN 4 May 51
703	NC86577	10482	1 Jun 46	Leased from US Govt. to USN 27 Oct 51
704	NC86582	18329	2 Apr 46	Leased from US Govt. to USN 3 Nov 51
705	NC88811	10484	26 May 46	Renumbered to Fleet No. 801* May 49
706	NC88812	10509	19 Jun 46	Leased from US Govt. to USN 19 Oct 51
707	NC88813	18344	12 Oct 46	Renumbered to Fleet No. 802* May 49
708	NC88814	18380	18 Sep 46	Crashed at Bainbridge, Md. 30 May 47 53 killed
709	NC88815	18331	16 Jul 46	Leased and returned to USN 9 May 51
710	NC86579	18334	31 Aug 46	Leased and returned to USN 16 May 51
711	NC88703	10438	18 Aug 46	Leased and returned to USN 11 May 51
712	NC88704	10443	11 Sep 46	Leased and returned to USN 10 Nov 51
713	NC88705	10495	29 Jun 46	Renumbered to Fleet No. 803* May 49
714	NC88707	18378	25 Jul 46	Leased and returned to USN 5 Jun 51
715	NC88724	10535	30 Aug 46	Leased and returned to USN 17 Nov 51
716	NC88727	18365	27 Sep 46	Hit by P-38 NX26927 flown by Bolivian DCA at Washington Ntl. Apt. 1 Nov 49
717	NC88729	18396	20 Sep 46	Crashed at Arlington, Virginia, 11 Oct 46 55 killed
718	NC34045	10542	29 Sep 46	Leased and returned to USN 17 Oct 51
719	NC34070	10536	1 Sep 46	Leased and returned to USN 9 Jan 51
720	NC54365	10492	2 Oct 46	Renumbered to Fleet No. 804* May 49
721	N79000	3058	Apr 51	Modified for passenger use, Oct 52
723	NC95490	10774	15 Apr 47	Bght from USAAF 31 Dec 46. Fleet No. allocated Jun 48 on conversion from mili- tary. Renumbered Fleet No. 805*
724	N90421	18394	16 Mar 50	Renumbered F/N806 18 Nov 50
725	N90425	10534	13 Apr 50	Modified Aug 52 for passenger use Renumbered F/N807 5 Dec 50. Modified Dec 52 for passenger use
726	N88890	10481	16 Oct 50	Purchased from Pan American
727	N88894	10496	13 Oct 50	Purchased from Pan Am.; later F/N803
728	N88902	10449	8 Oct 50	Purchased from Pan American
729	N88929	18397	13 Nov 50	Purchased from Pan American
501	N56010	10330	29 Mar 50	Leased fr Trans Caribbean to 16 Feb 52
502	N75415	10359	29 Apr 50	Leased fr Trans Caribbean to 26 Apr 52
503	N75416	10411	19 Mar 50	Leased fr Trans Caribbean to 24 Mar 52
730	N90412	3085	23 Jun 50	Purchased from American Airlines. Previous Fleet No. 771. Modified Aug 52
731	N90432	10314	23 Jun 50	Purchased from American Airlines. Previous Fleet No. 772. Modified Aug 52
732	N90443	10352	23 Jun 50	Purchased from American Airlines. Previous Fleet No. 773. Modified Aug 52

\* Leased to Pan American for military service, Aug 50  
NX88706 (10297) was leased from US Navy c1944



# Douglas DC-4

44 Seats • 215 mph



*Artist's Note: Among airliner aficionados, the common aircraft recognition or identification rule for distinguishing the DC-4 from the DC-6/7s is "round windows v. square windows." Both are wrong. The rule should be "oval v. rectangular."*

Size comparison with the L 1049G (p.53)



Engines	Pratt & Whitney Twin Wasp
	1,450 hp (x 4)
MGTOW	73,000 lb.
Max. Range	2,500 miles
Length	94 feet
Span	118 feet

Back in 1936, the Douglas Aircraft Company accepted half a million dollars from five airlines (\$100,000 each) towards the cost of a four engine airliner that was twice as big, carried twice as many passengers, could fly twice as far, and was 50 mph faster than the ubiquitous and highly successful DC-3. The DC-4E (E for experimental) was not a success, and the airlines (Pan American, American, T.W.A., United, and Eastern) ordered a total of 61 DC-4s on 26 January 1940. By the time the first aircraft made its maiden flight, on 14 February 1942, the United States was at war. The DC-4s became wartime military transports, Army C-54s or Navy R5Ds. As narrated on page 42, Eastern's DC-4s went into service early in 1946.



# Pressurized Service

When Howard Hughes and Jack Frye flew the first Lockheed Constellation from Burbank to Washington on 17 April 1944, it not only beat the transcontinental record flying time (in 6 hr. 57 m.) it heralded a new generation of commercial airliners. It was elegant in appearance, and its engines were more powerful than those of the Douglas DC-4, so that its near-300 mph speed was itself significantly faster than the 215 mph of the Douglas. Far more important was its pressurized fuselage, which enabled it to fly higher, at 20,000 feet or more, compared to the unpressurized DC-4, which had to face the same turbulent conditions at the lower altitudes as did the old DC-3s.

Such was the superiority of the Lockheed product that all the major airlines had to have it; and Douglas had to

respond to the clearcut strength of the competitor by modernizing the well-tried DC-4. The resultant Douglas DC-6 was a lengthened DC-4, faster, and pressurized. The two companies would alternate in a succession of designs that would last until the advent of the Jet Age. United Air Lines and American Airlines remained faithful to Douglas, while T.W.A. kept to the forefront by making successive improvements in the Constellation. Eastern, however, starting with the Model 649 "Connie," patronized both manufacturers.

It was also to the forefront in the development program. As subsequent pages will show, it was the launching customer for some of the later models, and altogether, Eastern's total fleet was almost as large as T.W.A.'s—and all flying in a concentrated route pattern east of the Mississippi.

## LOCKHEED 649 CONSTELLATION

Fleet No.	Regn.	MSN	Date of First Service	Disposal
101	N101A	2518	11 Oct 47	Sold 10 Jan 61 to California Airmotive
102	N102A	2519	4 Jun 47	
103	N103A	2520	3 Jun 47	
104	N104A	2521	3 Jun 47	
105	N105A	2522	6 Jun 47	
106	N106A	2523	10 Jun 47	
107	N107A	2524	12 Jun 47	
108	N108A	2529	22 Jul 47	
109	N109A	2530	23 Jul 47	
110	N110A	2531	26 Jul 47	
111	N111A	2532	22 Jul 47	Written off 3 Jan 60, Philadelphia; sold 10 Jan 61 to California Airmotive
112	N112A	2533	1 Aug 47	Damaged beyond repair Boston 21 Jan 48, no injuries
113	N113A	2534	31 Jul 47	Crashed Jacksonville, FL 21 Dec 55
114	N114A	2535	2 Aug 47	Sold 10 Jan 61 to California Airmotive

All except Fleet No. 111 converted to 749A in 1950. N113A was leased to Aeronaves de Mexico (AS-MAO) from 1958 until 10 Jan 61.



*This was Eastern Air Lines's first Lockheed Constellation Model 649, and the first of that fine series of aircraft to be built specifically for airline use, rather than being converted from wartime military types.*



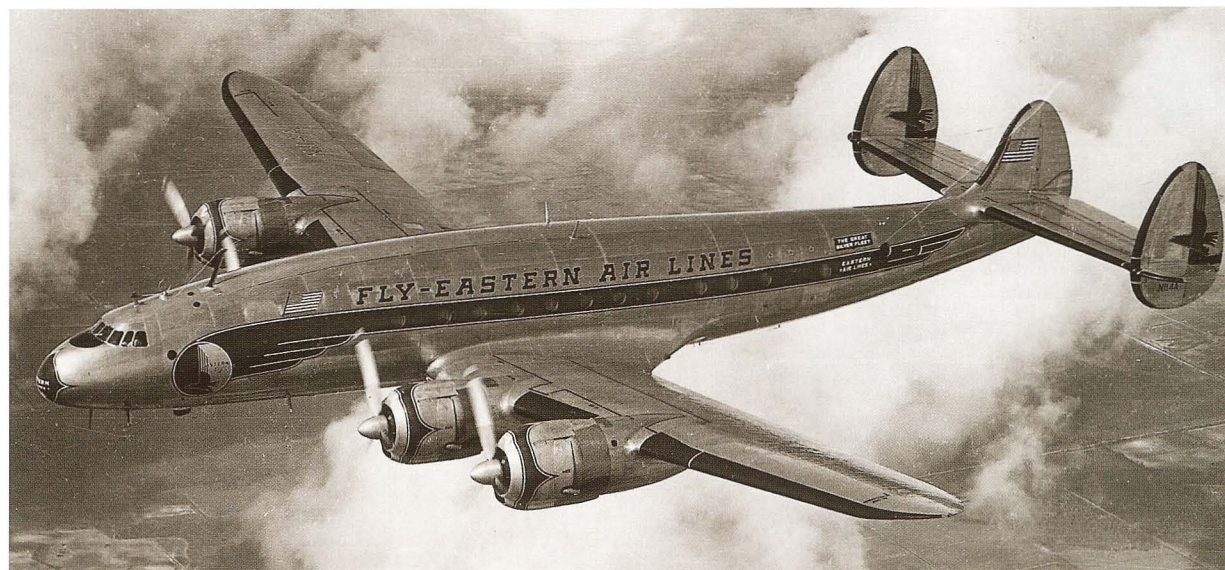
# Lockheed 649 Constellation

60 Seats • 285 mph



When Eastern received its first Constellations, **The Great Silver Fleet** slogan was still prominently displayed on the fuselage. But this soon gave way to a new slogan: **FLY-EASTERN AIR LINES**. The old one was reduced to a modest sign just above the rear door, and this too would eventually disappear.

Size comparison with the L 1049G (p.53)



*Displaying its elegant design, the new Constellation (N114A) relegates The Great Silver Fleet slogan to a small sign above the rear door, and appeals to the public to Fly-Eastern Air Lines.*

Engines	Wright 749C18-BD-1
	2,200 hp (x 4)
MGTOW	94,000 lb.
Max. Range	3,000 miles
Length	95 feet
Span	123 feet



*Constellation N112A at Miami, with new hangar construction making way for the larger post-war generations of four-engined airliners.*



# DC-3 Replacements

During the post-war boom in travel, as the United States returned to peacetime normality, the skies became more crowded, and the level of air transport intensified. As previously noted, larger aircraft such as the DC-4 and the Model 649 Constellation, at least double the size of the venerable DC-3, were needed to cope with the increased demand. The frequency of service on many of Eastern's routes was unfortunately marred by an increased frequency of crashes, no less than six between January 1947 and November 1949, all except one by the larger aircraft. One of these was unusual. On 7 February 1948, near Jacksonville, a Constellation "threw a prop." and a purser in the galley was killed. On board were Dick Merrill, a high-time pilot who had delivered the first Connie, and Winthrop Rockefeller. The aircraft landed safely.

On 29 March 1948, the company was re-incorporated (as Eastern Air Lines, Inc.) under Delaware law. On 5 February 1949, the first Model 749 "Gold Plate" Constellation was delivered, and six months later, on 25 September 1949, Eastern Air Lines inaugurated its first **Air Coach Service**. With this innovation, offering cheaper fares to the public, it was in line with the entire industry, which had been forced to follow **Capital Airlines's** example, which had boldly introduced its "Nighthawk" service on 4 November 1948. Eastern's first coach-class service was with a 56-seat DC 4. The passengers willingly exchanged pressurized comfort for the cheaper fare; the airline found that the reduction of revenue per passenger was compensated for by the extra seats and by a higher load factor that the cheaper fares stimulated.

As described on page 48, Eastern's expansion involved more than larger aircraft and more frequencies on its busy popular routes, such as New York-Miami, or New York-Washington. It was energetically adding more stations on its network, smaller communities which welcomed the addition of air service—inevitably the versatile DC-3. The Local Service airlines, such as Allegheny and Piedmont, did not get under way significantly until the 1950s, and meanwhile, Eastern met the new demand.

Such was the volume of traffic, and the rate of increase, that the airline needed to supplement the DC-3s on the routes of lower density, where the old "Gooney Bird" was beginning to

show its age, by comparison with the newer, pressurized types, all of which had nose-wheel landing gears. Boarding a DC-3 and climbing uphill to the front seats was leading to passenger dissatisfaction, and the solution was met by modern, pressurized, short-haul, twin-engined airliners. Eastern's choice was the 40-seat **Martin 404**.



## MARTIN 404 FLEET

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal Sold To
440	N440A	14109	21 Oct 51	Mohawk Airlines, 24 Sep 62
441	N441A	14110	17 Nov 51	Southern Airways, 20 Dec 62
442	N442A	14111	27 Nov 51	East Coast Flying Service, 20 Jul 60
443	N443A	14112	1 Dec 51	Mohawk Airlines, 18 Sep 62
444	N444A	14121	7 Dec 51	ASA Intl., 13 Jun 61
445	N445A	14122	16 Dec 51	Crashed Owensboro, Ky, 17 Feb 56
446	N446A	14137	22 Dec 51	East Coast Flying Service 15 Nov 62
447	N447A	14138	29 Dec 51	East Coast Flying Service 15 Nov 62
448	N448A	14139	6 Jan 52	Mohawk Airlines, 5 Oct 61
449	N449A	14140	17 Jan 52	Mohawk Airlines, 5 Dec 62
450	N450A	14141	23 Jan 52	Southern Airways, 20 Dec 62. Now preserved at Mid-Atlantic Air Museum, Reading PA
451	N451A	14142	31 Jan 52	Southern Airways, 5 Sep 61. Now preserved at Airline History Museum, Kansas City
452	N452A	14143	12 Feb 52	ASA Intl., 20 Jun 61
453	N453A	14144	19 Feb 52	Written off, Louisville, 10 Mar 57
454	N454A	14145	27 Feb 52	} ASA Intl., 20 Jun 61
455	N455A	14146	26 Feb 52	
456	N456A	14147	29 Feb 52	} Mohawk Airlines, 2 Mar 62
457	N457A	14148	27 Mar 52	
458	N458A	14149	14 Mar 52	Southern Airways, 1965
459	N459A	14150	12 Mar 52	Southern Airways, 16 Oct 61
460	N460A	14151	21 Mar 52	Mohawk Airlines, 2 Aug 61
461	N461A	14152	27 Mar 52	Mohawk Airlines, 12 Sep 61
462	N462A	14153	22 Mar 52	Mohawk Airlines, 17 Aug 61
463	N463A	14154	29 Mar 52	Southern Airways, 20 Dec 62
464	N464A	14155	8 Apr 52	Mohawk Airlines, 31 Aug 61
465	N465A	14156	5 Apr 52	Southern Airways, 26 Jul 61
466	N466A	14157	15 Apr 52	Southern Airways, 31 Jul 61
467	N467A	14158	14 Apr 52	Southern Airways, 20 Dec 62

Fleet No.	Regn.	MSN	Date of First Service	Remarks and Disposal Sold To
468	N468A	14159	17 Apr 52	Southern Airways, 20 Dec 62
469	N469A	14160	23 Apr 52	Southern Airways, 17 Sep 62
470	N470A	14161	29 Apr 52	Southern Airways, 23 Aug 62 Mohawk Airlines, 2 Aug 61
471	N471A	14162	30 Apr 52	Mohawk Airlines, 24 Sep 61
472	N472A	14163	6 May 52	Mohawk Airlines, 18 Sep 61
473	N473A	14164	8 May 52	Mohawk Airlines, 6 Dec 62
474	N474A	14165	9 May 52	Southern Airways, 4 May 62
475	N475A	14223	26 Sep 52	Mohawk Airlines, 26 Oct 62
476	N476A	14224	30 Sep 52	Piedmont Airlines, 9 Oct 62
477	N477A	14225	30 Sep 52	East Coast Flying Service 16 Jan 63
478	N478A	14226	9 Oct 52	Mohawk Airlines, 9 Aug 61
479	N479A	14227	14 Oct 52	Piedmont Airlines, 7 Sept 63
480	N480A	14228	13 Oct 52	} Piedmont Airlines, 31 Dec 62
481	N481A	14229	16 Oct 52	
482	N482A	14230	22 Oct 52	} Richardson & Bass Oil Company, 22 April 63
483	N483A	14231	29 Oct 52	
484	N484A	14232	1 Nov 52	Southern Airways, 20 Dec 62
485	N485A	14233	4 Nov 52	Mohawk Airlines, 7 Sep 62
486	N486A	14234	12 Nov 52	Aerojet-General Corp., 20 Dec 62
487	N487A	14235	13 Nov 52	Southern Airways, 20 Dec 62
488	N488A	14236	18 Nov 52	Southern Airways, 6 Nov 61
489	N489A	14237	19 Nov 52	Piedmont Airlines, 20 Dec 62
490	N490A	14238	22 Nov 52	Piedmont Airlines, 20 Dec 62
491	N491A	14239	22 Nov 52	Crashed at Massena, NY, 14 Nov 57
492	N492A	14240	26 Nov 52	Fort Worth Pipe&Supply, 15 Nov 62
493	N493A	14241	6 Dec 52	Piedmont Airlines, 20 Dec 62
494	N494A	14242	18 Dec 52	Southern Airways, 20 Dec 62
495	N495A	14243	24 Dec 52	Crashed Melbourne, FL, 17 Mar 58
496	N496A	14244	3 Jan 53	} Southern Airways, 20 Dec 62
497	N497A	14245	15 Jan 53	
498	N498A	14246	23 Jan 53	
499	N499A	14247	19 Feb 53	

Notes: Eastern took delivery of the first and the last Martin 404s produced. The airline sustained four Martin 404 crashes, but not a single passenger was killed. Eastern sold most of the fleet to Charlotte Aircraft Corporation, which then re-sold them to Local Service airlines. Some were stored before re-sale, others re-assigned directly. A few served initially with corporate customers. Four are preserved in museums.

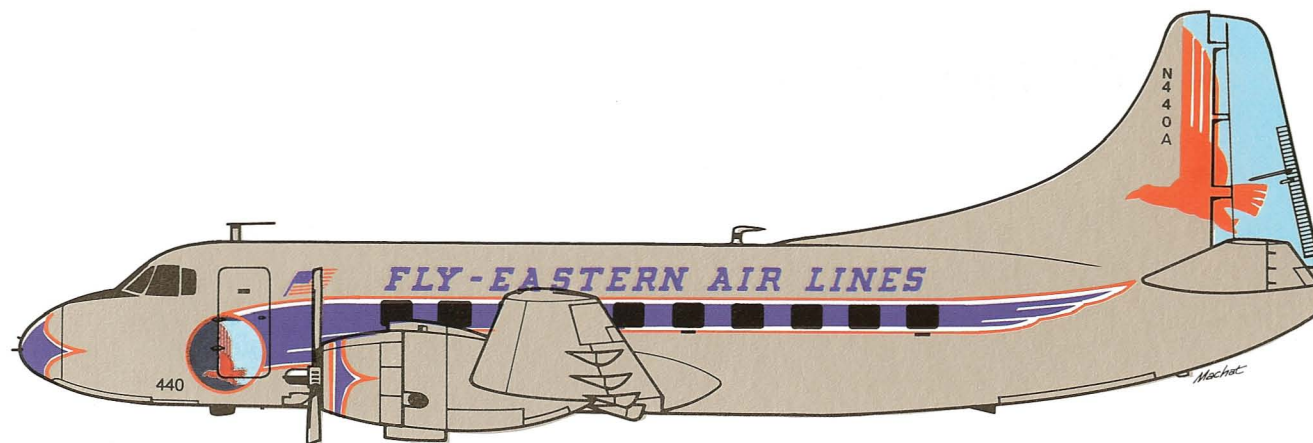


# Martin 404

40 Seats • 280 mph



<b>Engines</b>	<b>Pratt &amp; Whitney R-2800</b>
	2,400 hp (x 2)
<b>MGTOW</b>	<b>44,900 lb.</b>
<b>Max. Range</b>	<b>925 miles</b>
<b>Length</b>	<b>75 feet</b>
<b>Span</b>	<b>93 feet</b>



*Artists Note: The 404 and the Convair exhibited different design details. Most noticeable was the Martin's larger dorsal fin forward of the vertical stabilizer, and its unique multi-plane windshield. The forward fuselage is also shorter than the Convairliner's and the Martin's tailplane was dihedral. (see page 63)*



## Size comparison with the L 1049G (p.53)



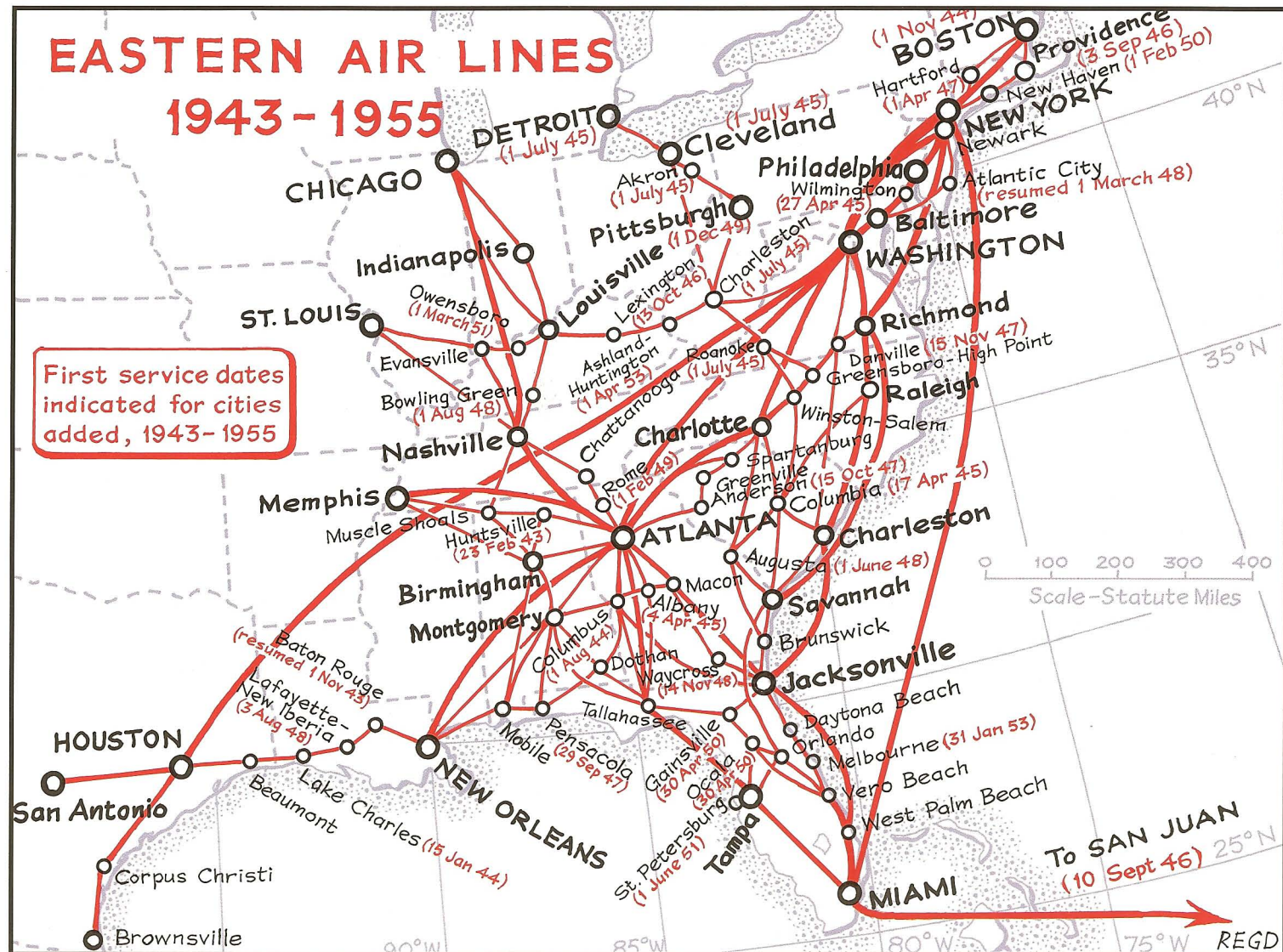
The U.S. manufacturing industry offered the airlines two choices for what sometimes became known as the "DC-3 Replacement"—although this term was interpreted in different ways. The Consolidated and Martin companies both offered 40-seat twins, of similar performance. But the unpressurized Martin 202 ran into severe structural trouble, and a series of crashes led to its grounding by the C.A.A. Martin put the matter right, and the pressurized Martin 404 competed with the Convair 240 for a market worth several hundred aircraft orders.

T.W.A.'s Howard Hughes and his senior executives conducted tests on both aircraft, and Hughes preferred the Martin. He telephoned Eddie Rickenbacker, so as to make an offer to Martin for a combined order for 100 aircraft. Rickenbacker signed a contract for 35, with additional options, on 7 March 1950 and the first one, carrying the "Silver Falcon" service name, went into service on the New York–Washington route on 15 June 1952.

While the Martin 202s had had serious problems, the 404s did well. During their service life with Eastern, not a single passenger was killed. This was also a reflection of the vastly improved post-war standards of technology and better operational efficiency. Post-war airline service and reliability had, by the 1950s, also risen to provide a much higher level of safety.



# Local Services



During the later years of the Second World War, Eastern had been able to add new stations to its already extensive route network east of the Mississippi. Huntsville, Alabama, for example, was served from 23 February 1943, specifically for the Manhattan Project development of the atomic bomb. Service to Boston began on 1 November 1944, so that Eastern now served every major city of the Northeast Corridor. The airline lost the New York-Miami monopoly but Detroit was reached in July 1945, San Juan in September 1946, and Pittsburgh in December 1949. By the early 1950s, operating in only one third of the United States, Eastern had become (measured by passengers boarded) not only the second largest airline in the United States, but also of the world.



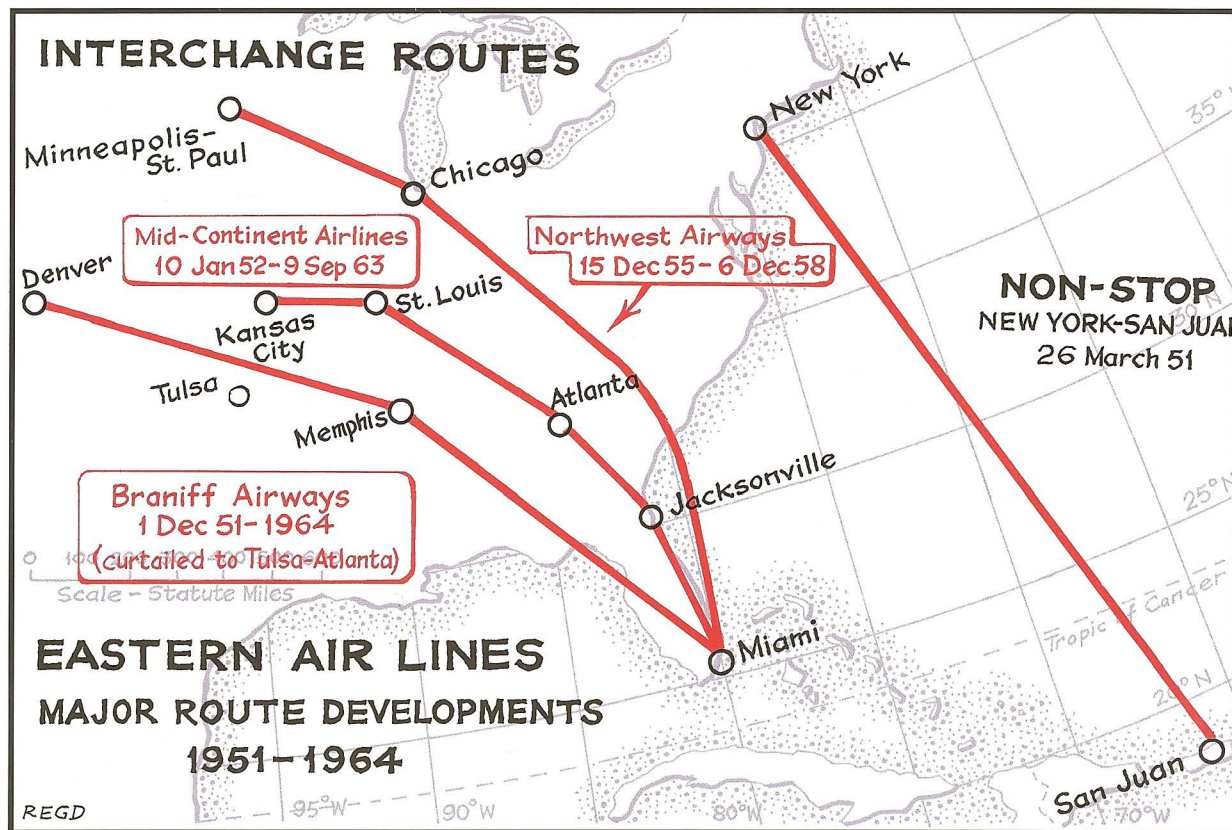
# Expanding Horizons

During the emerging years of peacetime operations during the late 1940s and the 1950s, the Civil Aeronautics Board was conscientiously concerned with the dangers of excessive competition, even though it was obliged to encourage airline rivalry, in the interests of instigating higher levels of technology and of operational efficiency. Airlines guarded their route authorities jealously, and often took extraordinary steps to demonstrate, in submissions to the Board, that the traffic demand between specific city pairs was insufficient to justify more than one airline—or, in the case of two incumbents, a third competitor.

Beginning in 1948, and up to 1955, the C.A.B. exercised a kind of Solomon's Judgment. In selected cases, it identified routes in which the limitations of traffic demand were recognized, but some latitude permitted to the rival aspirants. Airlines were permitted to make agreements to their mutual advantage, in what were termed **Interchange Services**. They could operate over certain route segments held by each other, taking turns to provide the aircraft, and operating through services without infringement of the certificated operating authority. Eastern Airlines was the beneficiary in three cases, as illustrated in the map. It gave it access to points west of the Mississippi River, and in turn it gave the partner airlines access to Florida. The system worked well for several years, until the time when the traffic demand on the routes reached a level when there was enough for all aspirants, without limitation, except for the time honored ways of competition by better flying equipment, better scheduling, and on-board amenities.

An important step was also taken on 26 March 1951, when Eastern was able to operate a direct **non-stop service from New York to San Juan**, Puerto Rico, without having to fly via Miami. The traffic on this route was booming. A mass exodus of Puerto Rican workers, seeking employment in New York, had created a constant flow of airliners, invariably full up, with the emigrants, their families, and the frequent visits of friends and relatives in both directions.

Gone were the days when Eastern feared intruders on what it regarded as its privileged turf, such as the New York-Miami route. Faster airliners with longer range were extending the horizons of all the airlines; and Eastern was getting a good share of those new opportunities.



By the 1950s, the veteran Douglas DC-3s had been relegated to local routes serving small communities (see map on page 48).

All the main cities were served non-stop by four-engine aircraft, the unpressurized DC-4s (left) and the pressurized Constellations (right).



# Intensified Service

The map on page 48 shows the route expansion of Eastern Air Lines during the post-war years. It does not, however, tell the full story of the airline's dominance within its sphere of operations. During the 1950s, on all routes to Florida east of the Mississippi, no less than 19 of the 25 cities that had more than 500,000 population were served by Eastern. Even more significant was that ten of these, including Detroit, Pittsburgh, St. Louis, and Cleveland, were connected to Miami and Tampa exclusively by Eastern. Rickenbacker's airline could reach 80 percent of the urban population with direct service, and 25 percent exclusively. As mentioned earlier, Eastern had a tremendous advantage economically, as the Florida traffic pattern ensured that it did not suffer during the winter months when most airlines experienced severe declines in passenger boardings. Eastern's actually increased, and it had to lease aircraft to match the winter demand.

Additionally, both the terrain and the climate were, compared with those of other airlines, relatively favorable to achieving good regularity and punctuality.

The scheduling was a model of efficiency, with the grid pattern of the route map lending itself to integrated flights, thus permitting a high level of aircraft utilization, a key factor in seeking low operating costs. This accounted, to a major extent, for the financial success of the airline, which had made a consistent profit every year since its reorganization in 1934. Eastern was achieving an average of about 12 flying hours per day from its aircraft fleet, a level that most airlines only aspire to. Yet Rickenbacker was always asking his staff what they were doing with the other 12 hours. Eddie's style was a strange mixture of, on the one hand, disciplined direction, with demonstrable rewards; and, on the other hand, an ascerbic attitude towards his staff, who had to toe the line.



*A Super Constellation 1049 (N6206C) poses with one of Eastern's original Pitcairn Mailwings of 1928. The Pitcairn pilot is seen "swinging the prop." He would be well advised not to try that procedure with the Connie.*



# Lockheed 1049 Super Constellation

88 Seats • 320 mph



## Size comparison with the L 1049G (p.53)



The difference between the airframe of this L 1049 and the Super-G was the shape of the nose. The latter had a larger nose cone to contain the radar.

Artist's Note: Larger and more powerful than the earlier 649s and 749s, the 1049 was most easily identifiable by its longer fuselage and larger square windows. Engine nacelles, housing the four Wright R-3350s, sported large cowl flaps and exhaust ports as well

<b>Engines</b>	<b>Wright 975C18-CE-1</b>
	<b>2,700 hp (x 4)</b>
<b>MGTOW</b>	<b>120,000 lb.</b>
<b>Max. Range</b>	<b>2,600 miles</b>
<b>Length</b>	<b>114 feet</b>
<b>Span</b>	<b>123 feet</b>



By the 1950s, Eastern Airlines traffic density on its main routes, especially on the New York-Miami trunk artery, called for larger aircraft. The answer was a stretched-fuselage version of the popular **Lockheed Constellation**, and on 17 December 1951, Eastern became the launching customer with its 88 seat **Super Constellation Model 1049** inaugural service to Miami. This provided a 30 percent capacity increase over the standard Constellation, even though the 57-seat Model 649s had been upgraded to Model 749s, with 64 seats. Eastern had introduced its first Air Coach service on 25 September 1949; air traffic was booming throughout the United States; and Eastern was getting a fair share of it.

## LOCKHEED'S COMMERCIAL CONSTELLATIONS

Model	Dimensions (ft)		Cruise Speed (mph)	Typical Range (miles)	Typical Seating	Gross Weight (lb)	Wright engine type	First Service Dates		No. Built
	Length	Span						Model	Eastern	
49	95	123	312	2,000	44-80	86,250-98,000	R-3350-35	14 Jan 46 (Pan Am)	—	73
649 & 649A	95	123	326	2,200	60	94,000	749C18	→	3 Jun 47	20
749 & 749A	95	123	310	3,000	60	107,000	749C18	17 Jan 47 (Pan Am) (TWA)	18 Feb 49	132

Note: 15 military C-69s were built, some of which were converted to civilian standard as Model 49s.



# The Constellation Fleet

The famous line of elegant Lockheed Constellations is remembered mainly as the flagship fleet of **T.W.A.**, which, with its charismatic owner, **Howard Hughes**, must be credited with its sponsorship during the Second World War. **Pan American Airways** also carried its fame overseas. Less remembered is that **Eastern Air Lines** had almost as many Connies as did T.W.A.: a total of 79 of various models, including the 649s (see pages 44-45) not far short of T.W.A.'s 87 (excluding the long-range 1649As).

Eastern's "Connies" operated only east of the Mississippi and were constantly on parade on the ramps at New York, Washington, Miami, and every major city of the east coast and San Juan. The Super Constellations were powered by the Wright 3350 turbo compound engines, which gave more power than those on the standard Connies, but unfortunately they gave more trouble. Nevertheless, the extra productivity more than compensated for the additional maintenance required.

## THE CONSTELLATION FLEET (see also page 44 for Model 649s)

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
Model 749			
N115A	2610	6 Feb 49	Sold to California Airmotive, Jan 61
N116A	2611	16 Feb 49	Leased, 23 Aug 60, then sold 30 Jun 61 to Transit Equipment Co.; (eventually crashed on training flight by F.A.A. crew at Canton Island)
N117A	2614	7 Sep 49	Sold to California Airmotive, 10 Jan 61
N118A	2615	27 Oct 49	Sold to California Airmotive, 9 Jul 60
N119A	2616	11 Nov 49	Crashed on take off from Idlewild Airport, NY, 19 Oct 53
N120A	2617	22 Nov 49	Sold to California Airmotive, 22 Nov 49
N121A	2618	7 Dec 49	

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
Model 1049			
N6201C	4001	18 Mar 52	Sold to Aviation Corp. of America, 30 Sep 68
N6202C	4002	4 Apr 52	" " " " 13 Dec 68
N6203C	4003	26 Nov 51	" " " " 30 Sep 68
N6204C	4004	11 Dec 51	Sold to International Aerodyne, 3 May 67
N6205C	4005	21 Dec 51	Sold to Aviation Corp. of America, 28 May 68
N6206C	4006	31 Dec 51	" " " " 28 May 68
N6207C	4007	8 Jan 52	" " " " 17 Apr 68
N6208C	4008	21 Jan 52	" " " " 30 Sep 68
N6209C	4009	31 Jan 52	" " " " 30 Sep 68
N6210C	4010	6 Feb 52	" " " " 30 Sep 68
N6211C	4011	14 Feb 52	" " " " Aug 68
N6212C	4012	20 Feb 52	Written off after ground collision with Eastern DC-7B (N808D), Miami, 28 Jun 57
N6213C	4013	27 Feb 52	Leased to Pan American, Jun-Nov 55; sold to Aviation Corp. of America, Jul 68
N6214C	4014	8 Mar 52	Damaged beyond repair after veering off runway at McChord AFB, Washington, 6 Sep 53

All Model 1049s sold to Aviation Corp. of America were withdrawn from use in 1967-68, and stored at Opa Locka, Florida, until sold.

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
Model 1049C			
N6215C	4523	25 Nov 53	Withdrawn from use, Miami, Aug 57; broken up May 68
N6216C	4524	7 Nov 53	Sold to California Airmotive, 30 Sep 68
N6217C	4525	16 Nov 53	
N6218C	4526	20 Nov 53	Crashed after mid-air collision with TWA Boeing 707 (N748TW) over North Salem, NY, 4 Dec 65
N6219C	4527	30 Nov 53	Damaged beyond repair, Miami, 18 Oct 66; broken up, Jun 67
N6220C	4528	13 Dec 53	Destroyed by fire, Idlewild Airport, NY, 3 Aug 61
N6221C	4529	19 Dec 53	(as N6215C)
N6222C	4530	23 Dec 53	Sold to California Airmotive Corp. 19 Jan 66
N6223C	4531	31 Dec 53	" " " " 30 Sep 68
N6224C	4532	10 Jan 54	" " " " 30 Sep 68
N6225C	4533	22 Jan 54	" " " " 29 Apr 66
N6226C	4534	24 Jan 54	" " " " 30 Sep 68
N6227C	4535	11 Feb 54	Sold to Wade Trading Corp. 20 Sep 71
N6228C	4536	19 Feb 54	Sold to California Airmotive Corp. 5 Sep 68
N6229C	4537	25 Feb 54	" " " " 30 Sep 68
N6230C	4538	28 Feb 54	Sold to Aerodyne, 26 Jan 67

- Notes: 1. All Model 1049Cs sold to California Airmotive (and Wade Trading Corp.) were stored at Opa Locka, Florida, 1966-68  
2. Five 1049Cs were converted to freighters, N6222C in Jul 63, N6225C, N6226C, N6227C, and N6228C, in Apr/May 60  
3. Six 1049Cs (MSN 4566-4571) were ordered but never built



This Lockheed 1049 (N6225C) carries, at the entrance door, the information that it is "Eastern's New 10,000 h.p. Super C Constellation." A Douglas DC 7B, carrying a revised, stylized, falcon insignia, is at the rear. (Photo, courtesy Roger Bentley)



# Lockheed 1049G "Super-G"

100 Seats • 310 mph



Regn. No.	MSN.	Delivery Date	Remarks and Disposal
Model 1049G			
N6231G	4653	26 Oct 56	Withdrawn from use and stored at Opa Locka, Florida, Nov 67-Feb 68; sold To California Airmotive Corp., 30 Sep 68
N6232G	4655	14 Sep 56	
N6233G	4657	1 Oct 56	
N6234G	4659	12 Oct 56	
N6235G	4660	18 Oct 56	
N6236G	4661	29 Oct 56	
N6237G	4662	2 Nov 56	
N6238G	4663	9 Nov 56	
N6239G	4664	15 Nov 56	
N6240G	4665	30 Nov 56	Withdrawn and stored, Opa Locka, Aug 66, sold to International Aerodyne, 12 Jan 67 Stored, Opa Locka, Jan 68; sold to California Airmotive, 30 Sep 69

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
Model 1049H			
N1006C	4802	Jan 57	All aircraft leased from Seaboard & Western Airlines, and returned to that airline, 5 Jun 57
N1007C	4805	10 Jan 57	
N1008C	4806	28 Jan 57	
N1009C	4807	13 Feb 57	
N1010C	4808	18 Feb 57	
Model 1049E			
N1005C	4557	Jan 57	(see Model 1049H)
Model 049			
N86536	1079	4 Dec 57 – 20 Apr 58	(see note next column)
N86502	2023	17 Nov 57 – 26 Apr 58	
N86514	2041	25 Nov 57 – 23 Apr 58	

Regn. No.	MSN. Date	Delivery	Remarks and Disposal
Model 049 cont.			
N86516	2043	15 Dec 57 – 17 May 57	All aircraft on short-term lease from Transworld Airlines, to meet seasonal demand for additional capacity on routes to Florida during the winter
N90926	2064	8 Jan 57 – 17 May 57	
N9410H	2073	28 Nov 57 – 18 Apr 58	
N9414H	2075	25 Dec 56 – 18 May 57	
N90815	2077	15 Dec 56 – 16 May 57	
N90818	2080	30 Nov 57 – 28 Apr 58	
N86526	2084	15 Dec 56 – 16 May 57	
N90825	2087	25 Dec 56 – 18 May 57	

## Engines

Wright 972TC18-DA-3  
3,250 hp (x 4)  
137,500 lb.  
3,500 miles  
114 feet  
123 feet

## MGTOW

## Max. Range

## Length

## Span

## LOCKHEED'S COMMERCIAL SUPER CONSTELLATIONS

Model	Dimensions (ft)		Cruise Speed	Typical Range	Typical Seating	Gross Weight	Wright engine hp	First Service Dates		No. Built
	Length	Span						Model	Eastern	
1049	114	123	301	2,600	88	120,000	2,700	—	17 Dec 51	24
1049C	114	123	314	2,450	99	128,500	3,250	—	15 Dec 53	48
1049D	114	123	314	2,450	104	135,400	3,250	14 Sep 54 Seaboard & Western	—	4
1049E	114	123	314	2,450	88	135,400	3,250	4 Aug 54 (Iberia)	Order cancelled Oct 56	28
1049G	114	123	310	3,500	60-112	137,500	3,250	1 Apr 55 (TWA)	—	10
1049H	114	123	310	3,500	112	140,000	3,400	Oct 56 (QANTAS)	Jan 57	5
1649A	116	150	340	4,500	64-99	160,000	3,400	1 Jan 57 (TWA)	—	44

Note: Models 149 thru 549, 849, 949, and 1149 thru 1549 were designs that were not put into production. Models 1049A, 1049B, and 1049F were military variants. Engines from 1049C onwards were turbo-compounds.



This group, possibly members of the Eastern staff, is boarding a special flight, the last Constellation (a Super-G) to carry passengers, on 14 February 1968.



# The Golden Falcon

The rivalry between the Douglas and Lockheed manufacturers swung backwards and forwards during a highly competitive decade, following the end of the Second World War. At first, the ex-Douglas military C-54s, converted to the original design as DC-4s, were quickly out-flown by the pressurized and elegant Lockheed Constellations. Douglas responded with pressurized DC-6s and DC-6Bs, and Lockheed hit back, impressively, with its Super Constellations. Douglas responded in what became a race to be the first non stop transcontinental airliner, with the DC-7 and the DC-7B for U.S. domestic routes. Finally, in another race, for trans-Atlantic non-stop capability, the Lockheed 1649A (see tabulation on page 53) battled with the Douglas DC-7C, the "Seven Seas."

During this period, Eastern Air Lines was involved neither in transcontinental or trans-Atlantic operations. But it was involved in bitter competition with the aggressive National Airlines in Miami, and a relative newcomer to the major trunk airline scene, Delta Air Lines, which had established a solid base in Atlanta, one of Eastern's biggest traffic hubs in the south. Delta had also gained a foothold in northern markets, with access to Chicago and the Great Lakes area. Seeking competitive superiority, Rickenbacker turned to the **Douglas DC-7B**, even though its flagship fleet was the Constellation. The DC-7B was faster, and in the 1950s, speed was one of the main ingredients in the almost ruthless battle for airline supremacy.



This picture was taken at Baltimore in 1964, showing the "Golden Falcon" on the tail, and also displaying the latest fashion in airline steps.  
(Photo: Roger Bentley)

## DOUGLAS DC-7B FLEET

Fleet No.	MSN	Delivery Date	Remarks and Disposal
N801D	44852	2 Jun 55	Sold 26 Jan 66
N802D	44853	8 Jul 55	Sold 18 Jun 65
N803D	44854	8 Jul 55	Sold 4 Jun 65
N804D	44855	27 Jul 55	Sold 1 Mar 65
N805D	44856	4 Aug 55	Sold 10 Mar 65
N806D	44857	18 Aug 55	Sold 27 May 65
N807D	44858	28 Aug 55	Sold 28 May 65
N808D	44859	31 Aug 55	Destroyed by fire after colliding on ground at Miami with Eastern's Lockheed 1049 (N6212C)
N809D	44860	14 Sep 55	Destroyed by fire after landing short of runway at Richmond, VA, 17 Jul 64
N810D	44861	22 Sep 55	Sold 20 Jul 65
N811D	44862	3 Oct 55	Sold 15 Nov 65
N812D	44863	10 Nov 55	Sold 14 Jul 65
N813D	45082	1 Aug 56	Sold 23 Nov 65
N814D	45083	14 Aug 56	Sold 9 Dec 65
N815D	45084	5 Sep 56	Crashed in bad weather on approach to Idlewild (now JFK), NY, 30 Nov 62
N816D	48085	13 Sep 56	Sold to Chicago White Sox Baseball team 26 Oct 64
N817D	45086	26 Sep 56	Sold 5 Feb 65
N818D	45087	8 Oct 56	Sold 1 Dec 64

## DOUGLAS DC-7B FLEET Continued

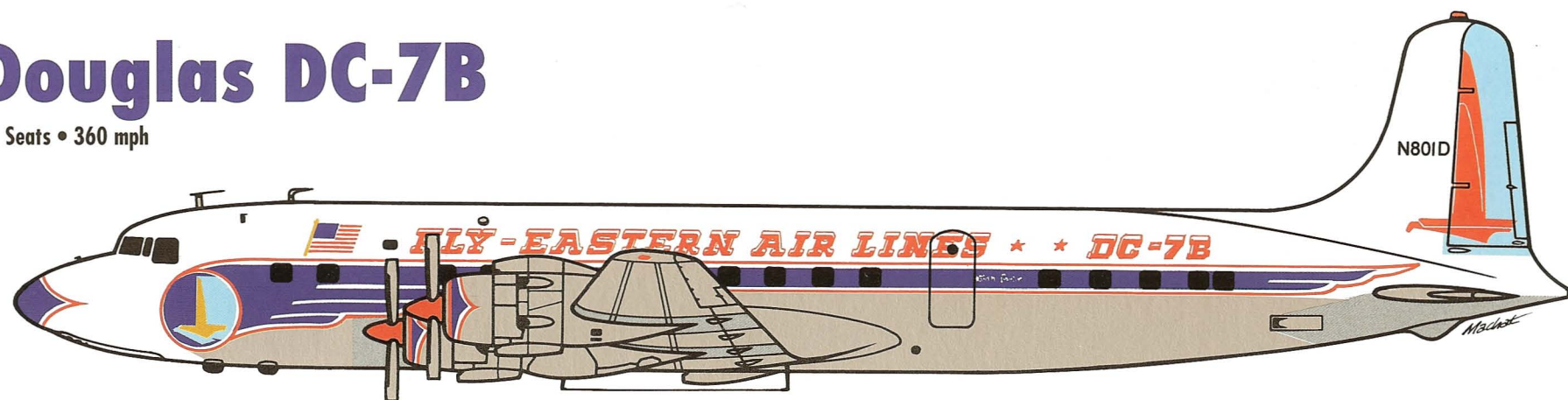
Fleet No.	MSN	Delivery Date	Remarks and Disposal
N819D	45088	12 Oct 56	Sold 14 Jan 65
N820D	45089	29 Oct 56	Sold 1 Dec 64
N821D	45330	12 Sep 56	Sold 9 Jul 65
N822D	45331	4 Oct 57	Sold 27 Jan 65
N823D	45332	11 Oct 57	Sold 1 May 65
N824D	45333	25 Oct 57	Damaged beyond repair when landing gear collapsed on landing at Charlotte, NC, 16 Oct 65
N825D	45334	31 Oct 57	Sold 23 Dec 65
N826D	45335	15 Nov 57	Sold to Lawson Aviation, 17 Aug 66
N827D	45336	22 Nov 57	Sold 10 Jan 66
N828D	45337	12 Dec 57	Sold to Tromsair, Sweden, as SE-ERG, 10 Aug 65
N829D	45338	12 Dec 57	Sold 6 Jan 65
N830D	45339	20 Dec 57	Sold 20 Jan 65
N831D	45341	20 Dec 57	Damaged beyond repair when landing gear collapsed on landing at Charlotte, NC, 20 July 64
N832D	45341	24 Dec 57	Sold 18 Aug 64
N833D	45342	11 Jan 58	• Sold 13 Aug 65. Still operational (as N1097), owned by William Waara, Miami Springs, Florida
N834D	45343	15 Jan 58	Sold 12 Oct 65
N835D	45344	20 Jan 58	Sold 5 Aug 65
N836D	45345	23 Jan 58	Sold 13 Sep 65. Preserved at the Minneapolis-St Paul airport
N837D	45346	27 Jan 58	Sold 17 May 65
N838D	45347	10 Feb 58	• Sold 24 Jan 66. Still in use as a fire-fighting tanker with TBM Inc., California
N839D	45348	11 Feb 58	Sold 12 Oct 66
N840D	45349	18 Feb 58	Sold 13 Feb 66
N841D	45447	25 Feb 58	Sold 1 Oct 65
N842D	45448	23 Feb 58	• Sold 23 Jul 65. Owned by LaGrande Air Service, Oregon
N843D	45449	17 Mar 58	Damaged beyond repair after nose landing gear collapsed at Nashville, 26 Jul 63
N844D	45450	26 Mar 58	Sold 27 Jul 65
N845D	45451	31 Mar 58	Sold 7 Dec 64
N846D	45452	—	Crashed on pre-sale test flight, 10 Mar 58
N847D	45453	16 Apr 58	Sold 2 May 65
N848D	45454	14 May 58	Sold 13 Jan 66
N849D	45455	15 May 58	Crashed into the sea off Jones Beach, Long Island, after taking evasion action to avoid mid-air collision with Pan Am Boeing 707 during climb-out, 8 Feb 65
N850D	45456	23 May 58	Sold 25 Dec 65

• All aircraft sold to California Airmobile, unless otherwise indicated. Aircraft N801D-N830D were fitted with luxurious "Golden Falcon" interiors, with 64 seats. Aircraft N831D-N850D were "Falcon Super Coach" versions, with 93 seats. Three DC-7Bs are still being flown, as noted in the tabulation.



# Douglas DC-7B

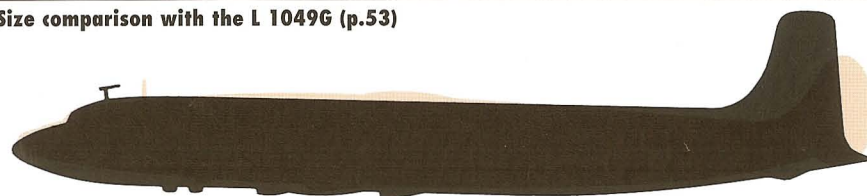
99 Seats • 360 mph



Engines	Wright R-3350
	3,250 hp (x 2)
MGTOW	126,000 lb.
Max. Range	2,760 miles
Length	109 feet
Span	118 feet



Size comparison with the L 1049G (p.53)



*In its distinctive lettering style, the advice to airline passengers to FLY-EASTERN AIR LINES, was a successful promotional slogan.  
(Photo courtesy Art Carter)*

The **Douglas DC-7B** was not much bigger than the popular thoroughbred, the DC-6B; but equipped with the Wright turbo-compound engines—3,250 h.p. versus 2,500, it was about 40 mph faster. Marketed with flair as Eastern's "**Golden Falcons**," it entered service on the busy routes from the northeast and the Great Lakes to Florida on 22 July 1955.

Not long before, Eddie Rickenbacker had been able to announce that his airline had completed 20 years of profitable operation, the last fifteen without subsidy. And 1955 was a banner year, in which the DC-7B's introduction was soon followed by orders for the prop-jet Lockheed Electra and the pure jet Douglas DC-8. Furthermore, as narrated in the following pages, Eastern expanded its network by the acquisition of another airline.



# Colonial Air Transport

On 16 April 1923, a company called **Bee Line, Inc.**, was founded by a group of New England businessmen. These included John H. Trumbull, Governor of Connecticut; Irving Bullard, a Boston banker; Cornelius Vanderbilt; and William A. Rockefeller. They were names to be reckoned with, but the fleet was not. It consisted modestly of one Fokker F-II, and two Standard biplanes. On 8 May 1924, the line was re-incorporated as **Colonial Air Lines**.

Early in 1926, it competed for the first mail contracts under the provisions of the 1925 "Kelly" Air Mail Act, but faced local competition from Eastern Air Transport (no relation to or connection with the later company, which is the subject of this book). The rival was led by Juan Trippe, who had previously tried to operate, unsuccessfully, Long Island Airways. On 25 January 1926, the two rivals merged and were incorporated as **Colonial Air Transport**. Among the new directors were John Hambleton, Connecticut Senator Hiram Bingham, Sherman Fairchild, and Professor Edward Warner, all of whom were to contribute, in different ways, to the progress of U.S. air transport.

On 2 June 1926, Colonial opened a daily mail and express service on Commercial Air Route No. 1 (C.A.M.1), from New York to Boston. The 192-mile route started at Hadley Field, New Jersey, the old Post Office Mail Service field. The first flight was made with a Curtiss Lark mailplane, and further aircraft were added—see opposite page. The airline clearly had wider ambitions, as on 28 December 1926, the \$330,000 stock was increased to \$2,000,000.

In the spring of 1927, Trippe and Hambleton left Colonial after disagreements on long-term policy. Most of the directors wished to remain identified only with New England. Trippe had ambitions to go south—and that, as the saying goes, is another story. The new general manager was John F. O'Ryan. Colonial's route was the first to be fully lighted, under the national Lighted Airway program; and on 4 April, it carried a few passengers; but this experiment was short-lived.

On 17 December 1927, Colonial started a new air mail route, C.A.M. 20. This was operated by an associated company, **Colonial Western Airways**, which offered daily passenger

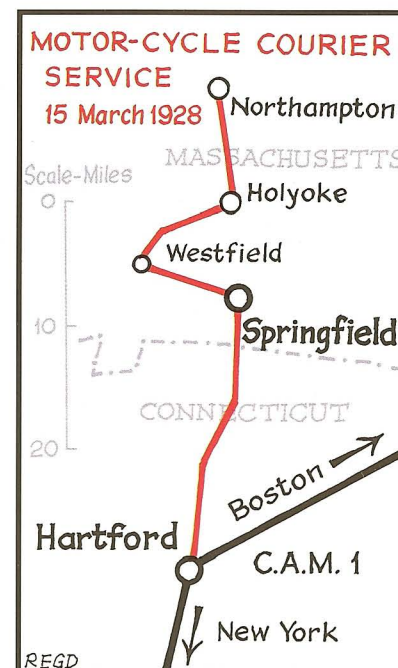
service as well as mail and express. The route started from Cleveland to Buffalo, and on 1 June 1928 was extended along the Mohawk Valley to Albany. The company's treasurer was William A. Rockefeller, no doubt a wise selection.

Expanding further, **Canadian Colonial Airways** was founded on 6 March 1928, and on 1 October, with the new Fairchild FC-2W2s, it opened a daily mail route from New York to Montreal, via Albany, where it connected with Colonial Western. The Canadian connection carried 31,000 lb. of mail in its first year—an impressive performance for the time. One quaint innovation was the introduction of a **motor-cycle courier service** on 15 March 1928, as illustrated.

On 17 February 1929, the old Hadley Field was replaced as the New York terminus by the new Newark Airport. But a month later, this promising move was marred by the crash of the new proudly-owned Ford Tri-Motor, on a local sight-seeing flight, in which 14 people were killed. At the time, it was the worst air disaster in U.S. air transport history. In March, the three separate Colonial airlines had re-organized, under a parent holding company, **Colonial Airways Corporation**.



On 15 March 1928, responding to initiatives in Springfield, Massachusetts, Colonial Air Transport cooperated with the Indian Motorcycle Company to operate a special courier service from the air field at Hartford, Connecticut. This unusual route extension did not, however, last very long.





# The First Colonial Fleet

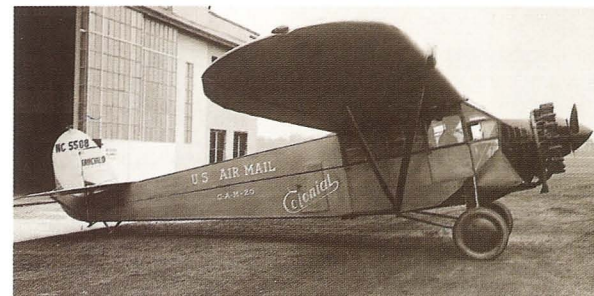


The Curtiss Lark was not a key element in the pioneer months of sustained airline history in the United States; but curiously it started the earliest services of two original ancestors of Eastern Air Lines. It started the Miami-Jacksonville mail service for Florida Airways on 1 April 1926 (see Page 9); and Colonial Airways's New York-Boston service on 1 June 1926. Colonial's Lark (N-AABC) was destroyed by fire at Hadley Field on 28 March 1927.



Colonial's first "fleet" comprised Fokker Universals. One (N-AABB), was the Fokker prototype, and was destroyed in the fire with the Lark.

This was the first production aircraft (N-AABA/NC54), which was damaged at Cheshire, Connecticut, on 16 July 1927, and wrecked at Willington, Connecticut, on 3 September 1927. Colonial also had a Fokker C-2 (U.S.-built F-VII/3m), named Chicago, in November 1926, and this too was written off at Teterboro, New York, on 17 June 1927.



Colonial Air Transport and Colonial Western each had four Fairchild FC-2s. They were NC 1851 (MSN 13), NC1852 (21), NC 3316 (29), NC 5508(109), NC 5658 (116), NC 6537 (122), NC 4012, and NC 5650. 3316, 5508, 5858, and 1852 were allocated to Colonial Western. All the Fairchild fuselages were painted blue. NC 1851 was wrecked at Hadley Field on 30 October 1927, and NC 5650 wrecked at Stafford Springs, Connecticut, on 5 January 1929.



This Canadian Colonial Fairchild FC-2W2. NC 8004 (MSN 515) was used on the New York-Montreal route (F.A.M. 1) from September 1928. Three other FC-2W2s were in the fleet: NC 8028 (138), (later; from 25 November 1930, CF-AKT); G-CAVL (516); and G-CAVN (522). The last two were registered in Canada. To meet regulations, Canadian-registered aircraft took the mail as far as Albany, and U.S.-registered aircraft took the mail on to New York.



Colonial Western had six Sikorsky S-38B flying boats, used from 15 June 1929 for service across Lake Ontario from Buffalo to Toronto.

At Buffalo, the connection was made with the airline's "trunk" route from Cleveland to Albany, where a further link was made to New York. The Colonial airline group thus connected the largest U.S. city with the two largest cities in Canada.



This Canadian Colonial Pitcairn PA-6 Super Mailwing was warming up at Albany, ready to fly the mail to Montreal. The group already had four PA-5s. Two, NC 5468 and NC 3469, were with Colonial Air Transport (New York-Boston); and two, NC3835 and NC 3837, with Colonial Western (Albany-Cleveland). The group had at least seven PA-6 Super Mailwings.

Canadian Colonial (New York-Montreal), had NC 7867, illustrated, three more, NC 7866, NC 7965, and NC 7966, were with Colonial Air Transport, and three, NC 7868, NC 355E, and NC 680E, were with Colonial Western. All were delivered between November 1928 and late 1929 and were operated for about three years.

NC 7866 was wrecked at Berlin, Connecticut, on 17 September 1929.

This picture of the Colonial Western Airways fleet was taken on 24 November 1924 to mark what was then a record mail load. It shows (right-to-left) FC-2W2 (NC 1852), a Ford 5-AT Tri-Motor (NC 8486), two more FC-2W2s, and a Pitcairn Mailwing.





# The American Way

During the spring of 1929, the Colonial stockholders were invited to exchange their stock with the **Aviation Corporation (AVCO)**, which thereby acquired a controlling interest in the entire Colonial group. Major General John F. O'Ryan continued as president of Colonial Air Transport, Inc., which became an integral division of AVCO. This corporation had been founded on 3 March, with substantial financial backing from Wall Street. It had already brought together the Chicago-based Universal Aviation Corporation (the result of the consolidation of many small airlines) and Southern Air Transport, based in Fort Worth, Texas, also the result of airline mergers. AVCO simplified a complicated organizational structure on 25 January 1930 by forming **American Airways**, which then purchased Standard Airlines from Western Air Express in the summer of that year, to complete a coast-to-coast network. It meandered across the continent in an uncoordinated way, so that its Colonial portion linked Chicago and New York via Cleveland and the Mohawk-Hudson Valleys; but Postmaster General Walter Brown soon brought order to a hitherto disorganized U.S. airline industry.

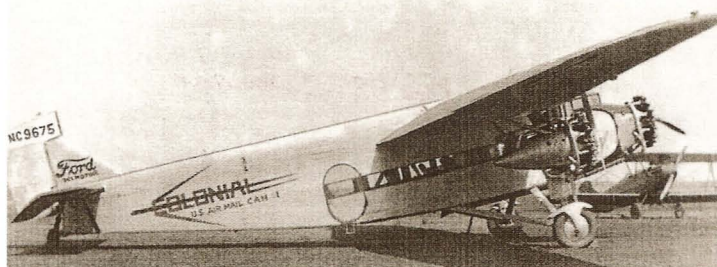
Under AVCO management, Colonial started New York-Boston passenger service on 15 April 1929; and Buffalo-Toronto, using Sikorsky S-38B amphibians (see page 57), across Lake Erie, and giving passengers an aerial sight-seeing of the Niagara Falls en route.

While the acquisition of Colonial gave American Airways the eastern extension it needed to reach New York, this was more in theory than in practice. The route meandered across the United States by a circuitous route. Although claimed to serve the nation from coast to coast and from Canada to Mexico, the cynics suggested that passengers travelled from Los Angeles to New York via Canada and Mexico.

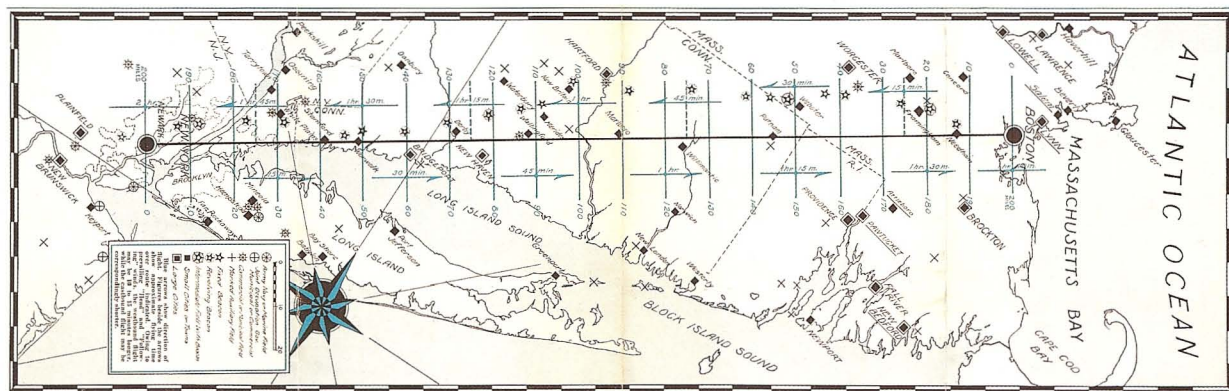
*This map was given to all the passengers on the New York-Boston route in 1930. It aimed to reassure them of the extensive support by navigational aids such as fixed or revolving beacons. The 200-mile distance was shown optimistically (for the Fords) as 1 hour, forty minutes, but a note explained that this could vary by 10 or 15 minutes because of headwinds or following winds. (Map by Colonial Air Transport, Inc., a Division of AVCO)*



*The Fairchild 71 was the ultimate development of the FC-2 series. At least seven were delivered to the Colonial group during 1929. Known aircraft were NC 9745 (MSN 611), NC 9782 (612) of Colonial Air Transport; NC 9148 (634), CF-ACG (653), NC 155H (663), and NC4K (678), of Canadian Colonial; and NC 145H (662) of Colonial Western. NC 9148 was wrecked at Jersey City on 18 April 1930, NC 9745 and NC 155H, and possibly others, were transferred to Alaska, after American Airways took control of the Colonial group, and on 1 September 1932, these passed to Pan American, which took over American's Alaska routes.*



*This Ford 5-AT-33 Tri-Motor was NC 9675, Colonial's first passenger flagship, named Nacomos, the name of Hiawatha's grandmother.*





# The Algonquin Fords

This was the cover of a Limited Special Edition (100 copies) of a souvenir booklet, printed for the directors and stockholders of Colonial in 1929. Colonial was then planning expansion in the New England area. A map showed a proposed coastal itinerary to Bar Harbor, Maine, calling at Montauk Point, Newport, Hyannis, Boston, and Portland; direct New York-Buffalo via Binghamton; Albany-Boston; and Buffalo-Toronto. Only the last of these proposals was started, after American Airways took over.

The three Ford flagships, used on the New York-Boston main route, were given names from the Algonquin language and from the dialect of the Massachusetts tribe, indigenous to the region over which Colonial flew.

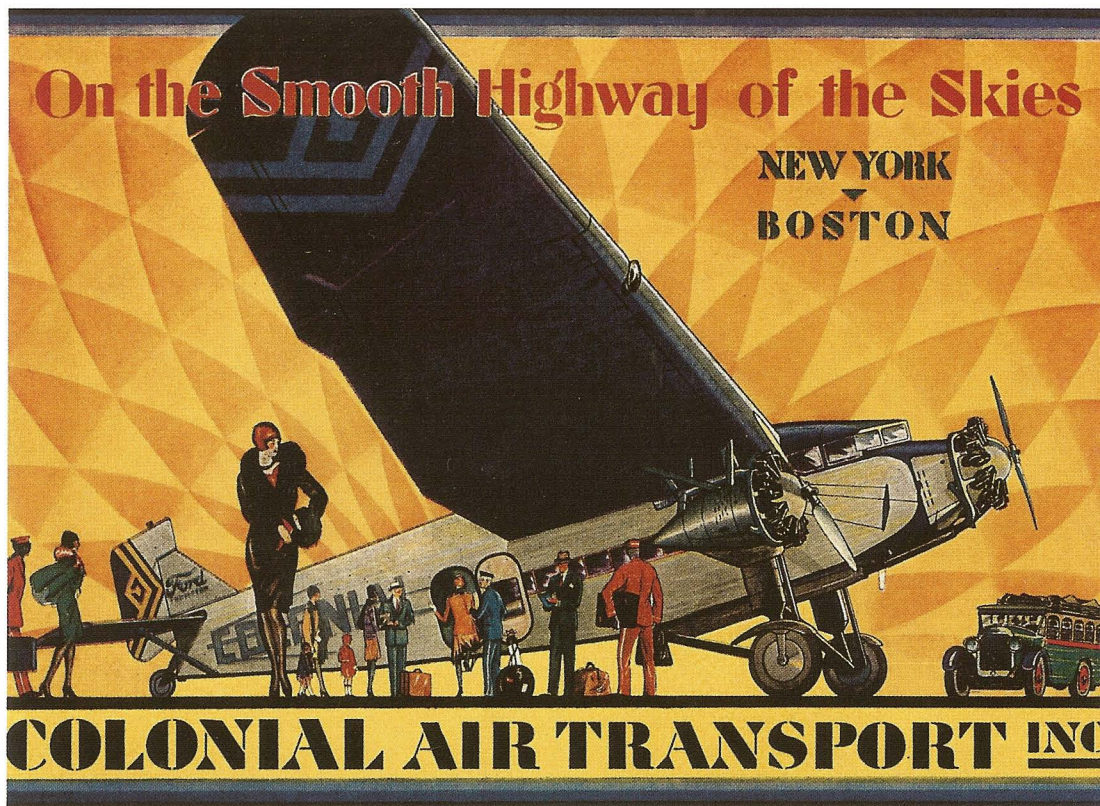
Regn.	MSN	'Algonquin' name	Origin of name and Disposal
NC 9675	5-AT-33	Nacomos	Named after the daughter of the moon and earth-mother. She was the grandmother of Hiawatha, founder of the Iroquois. Aircraft was destroyed in a crash at Boston, 5 Jun 30.
NC 9677	5-AT-35	Nonanatum	Name of hill near Newton, Massachusetts, where stood the wigwam of Waban, chief of the Massachusetts tribe. Aircraft to American Airways, 23 Nov 31.
NC 9681	5-AT-36	Nemissa	The name means "star-maiden," according to a legend of the Ojibway tribe. She was the youngest of the twelve star-sisters. Aircraft to American Airways, 4 April 33.

## Other Colonial Fords

NC-9663	5-AT-14	Purchased from Universal Aviation Corp., 6 May 30; to American Airways, 21 May 34
NC 9682	5-AT-43	Purchased from SAFEway, 3 July 31; to American, 4 Oct 32
NC 8486	5-AT-94	Delivered to Colonial 20 Feb 30; to American, 16 Dec 32



One of the "Algonquin" Ford Tri-Motors is seen here at Newark Airport in 1929. Passengers are being helped on board from the Colonial bus, direct to the airplane. They appeared to be checking in with the Colonial official as they got off the bus. Those were innocent days.



This luxury limousine left New York's Pennsylvania Hotel at 9.15 a.m., stopped en route at the Manhattan end of the Holland Tunnel, and arrived at Newark Airport at 9.50 a.m. The aircraft left for Boston at 10 a.m. Such a schedule would be impossible today.



This was the Ford 5-AT-33 NC 9675, Nacomos (also pictured on page 58), showing the new Colonial markings on the tail and wing-tips. All three of Colonial's air mail contract numbers, C.A.M.1, C.A.M. 20, and F.A.M.1, are marked by the door.



# Renewed Independence

When American Airways absorbed Colonial early in 1930, its main objective was to integrate the route and mail contract authority, with the prospect of future realignments, into a transcontinental system. This it achieved, but the plans did not include any special concentration in the New England area. The record Fairchild order of 50 aircraft, announced in June 1929, was curtailed; and the order for the 20-seat Keystone Patrician, to meet passenger demand on the New York-Boston route, was cancelled. But 50-trip commutation tickets were sold to well-heeled businesses which needed frequent travel between the two cities.

After the complete overhaul of the U.S. airline industry, following the "Air Mail Scandal" of 1934 (see page 28) the Aviation Corporation (AVCO), which owned American Airways, was obliged to distribute its stockholders' shares, as the new laws did not allow a U.S. domestic airline to operate to a foreign country. Thus, **Canadian Colonial Airlines** was reconstituted, with AVCO shareholders holding a one-twentieth share of Canadian Colonial for each share of American Airways. The single route continued to be operated with American-leased Vultee V-1As and Stinsons—virtually "cast-offs" from the main network. A service was opened to Ottawa in February 1936, but discontinued two years later.

Then, in 1938, when the Civil Aviation Authority (C.A.A.) came into being, a further reorganization of routes

and authorities created what became known as "grandfather rights" to all routes operated by U.S. airlines. This involved a further restriction on ownership, and the American Airlines shareholders (the Airways had become Airlines in 1934) had to divest themselves of their Canadian interests.

In October 1939, Canadian Colonial was sold to **Sigmund Janas** and a group of business associates. At the time, it had a single route, from New York to Montreal, and a modest fleet that included two Douglas DC-2s. The new company set out to rejuvenate the airline that had so many traditional ties with New England, and with its Canadian neighbor. In 1941, it secured rights to a new route, serving Burlington, Glens Falls, and St. Jovite. Janas purchased some Douglas DC-3s, and the airline was renamed **Colonial Airlines, Inc.** on 1 May 1942, to meet with a Civil Aeronautics Board decision that a Canadian company could not longer operate as a subcontractor—this to clarify an arrangement whereby a Canadian registered company had operated the southbound flights, and a U.S. Company the northbound.

With the approach of the Second World War, Colonial had a fleet of six DC 3s and two DC-2s. Four DC-3s and the two DC-2s were sold to the U.S. Army, and from June 1942 until June 1944, Colonial operated under contract to Air Transport Command on routes in New England and to Chicago.



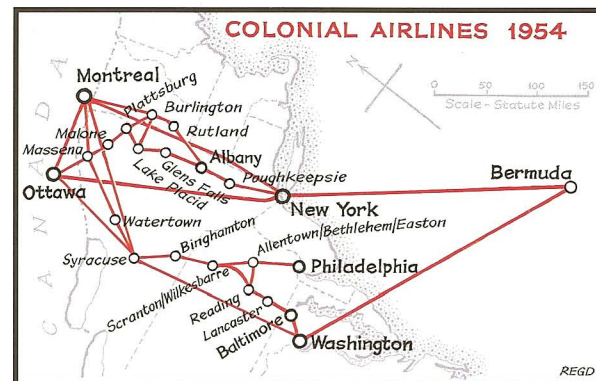
This picture of a Colonial Airlines DC-3 (N 21798) was taken at Washington Airport on 12 May 1957 by veteran photographer Art Carter.

## COLONIAL'S DOUGLAS DC-3s (All except \* to Eastern Air Lines, 1 June 1956)

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N17335	1921*	26 May 48	Bought from American; crashed 20 Sep 48 at Burlington, Vermont (no fatalities)
N16096	2136	3 Dec 48	Bought from American; sold F.B. Ayer, 30 Jan 57
N21745	2103	22 Oct 48	Bought from American; sold to Remmert Warner, 31 Jan 57
NC21751	2127	3 May 39	New (Canadian Colonial); USAAF 8 Jan 42-3 Jul 44; sold to Remmert Warner, 31 Jan 57
N21752	2165*	14 Feb 49	Bought from American; sold to Owens Illinois Glass, 14 Aug 50
NC21758	2237	1 Jul 42	Bought from Amer; sold to R.W., 31 Jan 57
NC21759	2238	26 Jun 40	New (Canadian Colonial); sold to Remmert Warner, 31 Jan 57
N21795	2200	31 Jul 48	Bought from Amer; sold to Beldex Corp. May 59
N21798	2202	26 May 48	Bought from Amer; sold F.B. Ayer, 26 Oct 56
NC28323	2253	22 Mar 46	Bought from Northeast Airlines; sold to Caribbean Atlantic Airlines, 31 May 57
NC28324	2254*	13 Dec 45	Bought from Northeast; sold to Capital Airlines, 25 May 40
NC28360	2271*	19 Nov 40	New (Canadian Colonial); USAAF 8 Jun 42-21 Jun 44; sold to Capital, 25 May 50
NC86586	7395*	--	Ex-USAAF; sold to L.H. Cameron, Jan 54

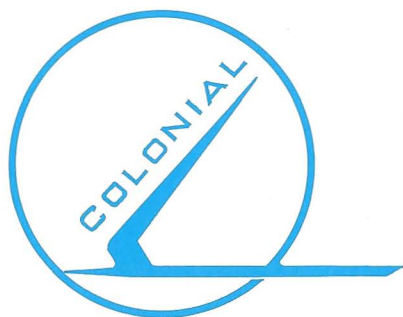
### Notes:

1. Colonial had two Douglas DC-2s, NC14925, MSN 1411, delivered 4 Sep 42, ex-Canadian Colonial CF BPP; and NC 14276, MSN 1309
2. N 21798 is restored as flagship Knoxville in the C.R. Smith Museum, Dallas
3. In May 1946, Colonial listed four DC-3s in its fleet: NC86547 (19961), NC86548 (20405), NC86591 (20083), NC86592 (9162). These went to Argentina, and may not have been operated by Colonial.





# DC-4s to Bermuda



*Colonial DC-4 N93267 loads the bags at Washington's Airport. In addition to the daily service from New York to Bermuda, the DC-4s made four round trips a day to Montreal, with flights named *The Star*, *The International*, *The Pioneer*, and *The Lark*. (Photo, courtesy Art Carter)*

The remnants of American Airways's original Colonial Airways Corporation had continued operations precariously in the 1930s—see page 60.

Colonial Airlines survived the Second World War—but only because of stout efforts by its management. The “Grandfather” route awards of 1938 resulted in it being the smallest of the certificated airlines. Depredations of its fleet by wartime requisitioning left it, in 1945, with a total fleet of two DC-3s. And in contrast with Eastern, which enjoyed buoyant winter traffic to Florida, Colonial's dropped off considerably during the Canadian winter months.

Under the leadership of **Sigmund Janas**, things picked up after the end of hostilities. On 10 August 1945, the C.A.B. awarded the diminutive airline an additional U.S. terminus, Washington, for its Montreal connection, and Ottawa, Canada's capital, as an additional destination. To boost winter traffic, Colonial promoted winter ski resorts in Canada. Intermediate points in New York State and New

Hampshire were also included in the award. Glens Falls proved a good traffic generator, situated as it was close to the Saratoga Race Track. Five more DC-3s were added to the fleet early in 1946, as the network had more than doubled in route mileage.

Then on 22 May 1946 it more than doubled again, when Colonial acquired, under mail contract FAM 33, routes to the British Atlantic Ocean island, **Bermuda**, from both New York and Washington.

To serve this desirable route addition, Janas purchased two **Douglas DC-4s** from other operators, and service to Bermuda began on 1 August 1947. Colonial Airlines was still very small, compared to other U.S. airlines, and it had ambitions to expand to the Great Lakes area and throughout the southeast, paralleling Eastern's route as far as northern Florida and New Orleans. One speculative map showed routes throughout Pan American territory in the Caribbean and South America. But none of these ever materialized.

Colonial's network was never economically viable, and it became the target for “merger” proposals. By 1951, a battle raged between Eastern Air Lines, and its old adversary, National Airlines, with the latter's Ted Baker pulling out all the stops against Eddie Rickenbacker (see page 62). The long-drawn-out struggle lasted for five years, and is narrated on page 62.

## COLONIAL'S DOUGLAS DC-4s (All to Eastern Air Lines, 1 June 1956)

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N4270	18370	1953	Ex-N8344C, Civil Air Transport
N93266	10299	29 May 47	Ex-YV-AHU (LAW, Venezuela); <i>Skycruiser Bermuda</i>
N93267	7476	29 May 47	Ex-BuA39179, U.S. Navy; <i>Skycruiser America</i>
N4268	10370	19 Jan 50	Ex-42-72265, USAAF; <i>Skycruiser Canada</i>
N4269	10308	23 May 50	Ex-NX30067, ex War Assets Administration; <i>Skycruiser New York</i>



# Eastern Goes International

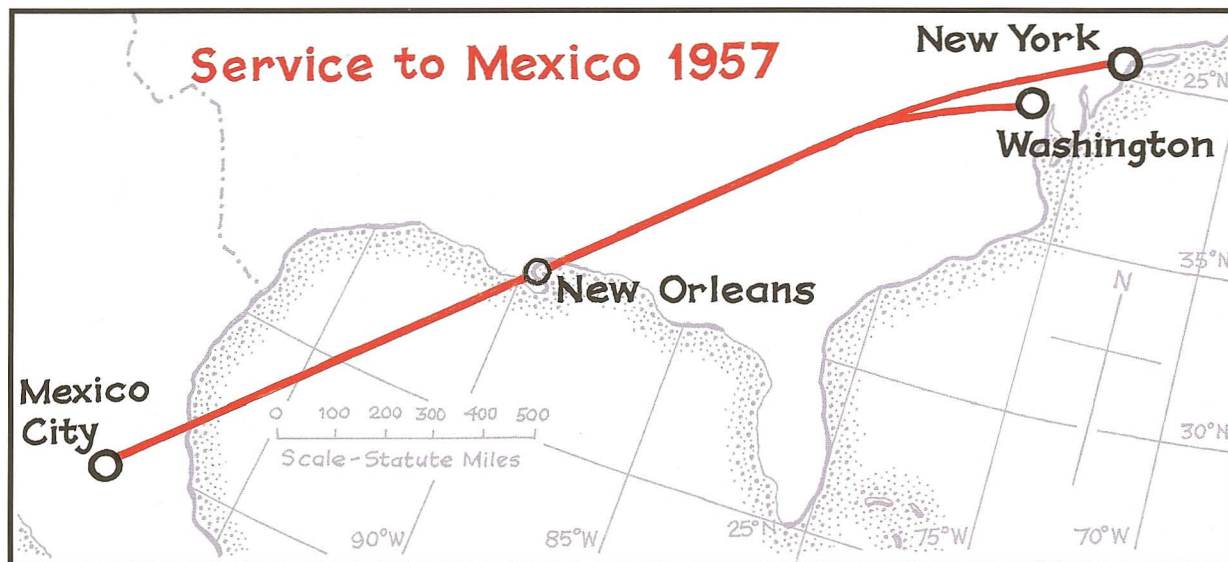
The mid-1950s was an eventful stage in Eastern Air Lines's history. The introduction of alcoholic beverages on board, on 1 December 1954, was perhaps a celebration of completing 20 years of profitable operation. This was the result almost entirely of the relatively non-seasonal nature of the routes to Florida; but also on the operational efficiency, specifically in achieving a high rate of aircraft utilization - a fleet average of up to ten hours a day or more in the air.

More important, however, was the acquisition (or "merger" as the action was euphemistically called) of **Colonial Airlines**. In 1951, Eastern and National Airlines sparred for its control, with Eastern making a formal offer on 20 November 1951. National's offer failed because a block of non-voting stock was controlled by Eastern. On 30 September 1952, the Eastern offer was approved by Colonial's stockholders, and on 27 November the merger seemed to be sailing through the C.A.B. confirmation process, but there were strong objections from Ted Baker's National. On 1 March 1954, President Eisenhower over-ruled the pending C.A.B. approval of Eastern's bid, on the basis that it "had acquired 'unlawful control of Colonial, in violation of Section 408 of the Civil Aeronautics Act prior to approval by management and shareholders."

The plot thickened. On 17 June 1954, the Board issued a statement favoring a Colonial-National merger. Eastern countered by suggesting a new solution for voting the questioned stock. Claims and counter-claims dragged on, and finally, on 1 June 1956, the merger was formally completed in Eastern's favor.

For two years, the Colonial routes were operated as the **Colonial Airlines Division** of Eastern, with a fleet of 8 DC-3s and 5 DC-4s. When the name disappeared from the official records, it had completed its entire 26 years of existence without a single fatality, in spite of the often severe winter weather in its operating area. As for Eastern, which had only reached Puerto Rico, beyond the 48 States, it could now, with routes to Canada and Bermuda, enter the ranks of the international airlines.

A further incursion into a foreign field was made in the following year. On 17 July 1957, a DC-7B opened service from New York to **Mexico City**, via New Orleans. And on 23 September of that year, Washington was added as a capital-to-capital service between the two countries.



On 22 July 1955, the DC-7B Golden Falcon was introduced (see pages 54-55); on 27 September, Eastern ordered its first turboprop aircraft, Lockheed Electras (see pages 64-65); and an interchange service to Minneapolis-St. Paul began, partnering Northwest airlines, started on 15 December. This resulted in Boeing Stratocruisers operating Eastern services from the Twin Cities to Miami, but not in its own colors. On 7 December 1955, Rickenbacker ordered the airline's first jets, 20 Douglas DC-8s. (See pages 66-67). The mid-1950s witnessed several important events. Passing relatively unnoticed among these prestigious announcements was an order for 12 **Convair 440** twin-engined airliners, to supplement the Martin 404s. This picture was taken at Houston in 1961. (Photo, courtesy Art Carter)



# Convair 440

52 Seats • 289 mph

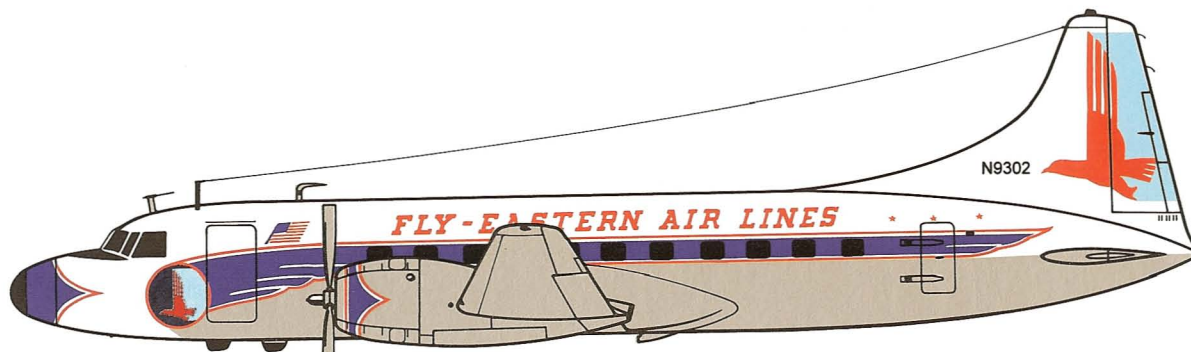
## CONVAIR 440 FLEET

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N9301	415	15 Apr 57	Sold to Ransome, 11 Jun 70
N9302	416	15 Apr 57	Sold to Ransome, 11 Jun 70
N9303	417	17 Apr 57	Leased to Standard Airways, 27 Mar 69; returned to Eastern 1970; sold to Ralco Inc. 13 Mar 70
N9304	418	22 Apr 57	Sold to Great Western Intl., 6 Apr 70
N9305	419	25 Apr 57	Leased to Standard Airways, 9 Jun 69; returned to Eastern 1970; sold to Ralco Inc. 24 Mar 70
N9306	420	30 Apr 57	Sold to Carolina Aircraft, 25 Mar 70
N9307	421	10 May 57	Leased to Standard Airways, 25 Apr 69; returned to Eastern 1970; sold to Mackey Intl. Airlines 1972
N9308	422	9 May 57	Sold to Ransome, 11 Jun 70
N9309	423	15 May 57	Sold to Ransome, 11 Jun 70
N9310	424	16 May 57	Sold to Ralco Inc. 13 Mar 70
N9311	425	17 May 57	Sold to Ransome, 23 Jun 70
N9312	426	23 May 57	Sold to Ransome, 17 Jun 70
N9313	427	20 May 57	Sold to Ransome, 11 Jun 70
N9314	428	28 May 57	Sold to Ralco Inc., 13 Mar 70
N9315	433	10 Jun 57	Sold to Ransome, 9 Jun 70
N9316	434	13 Jun 57	Sold to Mackey Intl. Airlines, 24 Dec 70
N9317	435	26 Jun 57	
N9318	436	2 Jul 57	Sold to Ralco Inc., 13 Mar 70
N9319	437	24 Jun 57	Sold to Ransome, 28 Jun 70
N9320	438	22 Jul 57	Sold to Mackey Intl. Airlines, 24 Dec. 70

As with previous fleets, e.g. DC-7B and Constellation aircraft, the Eastern fleet numbers were the last three digits of the registration (or "tail") number.

While maintaining its position as one of the "Big Four" airlines, and with the Jet Age imminent, following Pan American's spectacular 1955 order for 25 Douglas DC-8s and 20 Boeing 707s, Eastern still had to look after its "bread-and-butter" routes, serving dozens of small communities throughout the eastern States. By the 1950s, the veteran Douglas DC-3s were now venerable, and obsolescent for front-line service. The Martin 404s, which had replaced them, were out of production. Eastern therefore had to mix its fleet of short-haul aircraft to serve the grid pattern of routes that blanketed its network.

The choice was the **Convair 440**, the latest of the series of well-tried twin-engined pressurized airliners that were still in production at the Consolidated plant in San Diego. They entered service in April 1957.

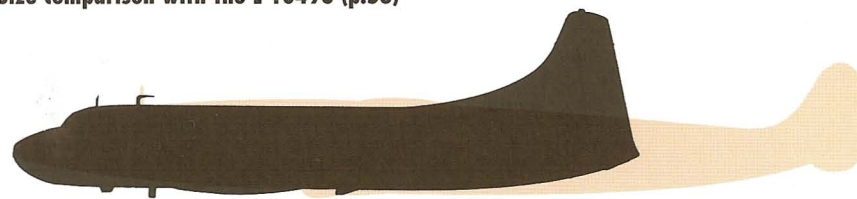


*Artist's Note: Convair's radar-equipped 440 Metropolitan was the thoroughbred of the Convair twins. Both the Martin 404 (see page 47) and the 440 had rear ventral passenger entrance steps in addition to their forward fuselage doors*



<b>Engines</b>	<b>Pratt &amp; Whitney R-2800</b>
	<b>2,500 hp (x 2)</b>
<b>MGTOW</b>	<b>49,100 lb.</b>
<b>Max. Range</b>	<b>650 miles</b>
<b>Length</b>	<b>79 feet</b>
<b>Span</b>	<b>106 feet</b>

### Size comparison with the L 1049G (p.53)



The Convair 440 was later given a new modern paint scheme that Eastern Air Lines adopted for its fleet. This picture of what became known as the "hockey-stick" design was taken at Atlanta in 1968. (Photo, courtesy Roger Bentley)



# Technical Revolution

In the summer of 1955, Eastern Air Lines, still controlled almost at a personal level by Eddie Rickenbacker, did not immediately follow the dramatic course of modernization soon to be set by the Pan American Airways order for 45 big jet airliners in October. In July he had augmented his fleet of Douglas DC-7B "Golden Falcons," and now he stayed at first with the propeller, ordering 40 **Lockheed Model 188 Electra** turboprops (prop-jets) on 27 September 1955.

This decision was no doubt influenced strongly by the entry into the U.S. airline scene of the world's first turboprop airliner, the British **Vickers Viscount**, powered by four 1,650 hp Rolls-Royce Dart engines. After great success on the short-haul routes of Europe, it was introduced into the States on 26 July 1955 by **Capital Airlines** on the Washington-Chicago route. The Viscount had 48 seats, but Eastern's main short-haul/medium routes generated more traffic than Capital's, and so Rickenbacker elected to go for the larger Electra, powered by four Allison 501 engines, and with a capacity of 98 comfortable seats.



*The Lockheed Electra, flying at about 400 mph, could match the journey times of the jets on many of the shorter airline routes, as it could cruise at a lower altitude, and save time on the climb and descent to and from the higher altitudes required by its faster competitors.*

Eastern Air Lines opened Electra service on 12 January 1959, the first Electra service in the world. (As a matter of interest, Eastern was also the last of the front-line operators to retire its Electras, on 30 October 1977). The accomplishment was a trifle lucky. American Airlines had been the launch customer for Lockheed, and had intended to be the first to open service; but a three-week pilots' strike delayed the event.

Lockheed proceeded to deliver the Electras at a brisk rate, and Eastern was able to put them on the New York-Puerto Rico route as early as 22 February 1959; but the success was soon dampened by a technical crisis—described on the opposite page. After the crisis was over, the airline described the rejuvenated airliner as a Super-Electra, and never looked back, serving the passengers well and able to hold its own against the faster jets on the short- and medium-haul routes.

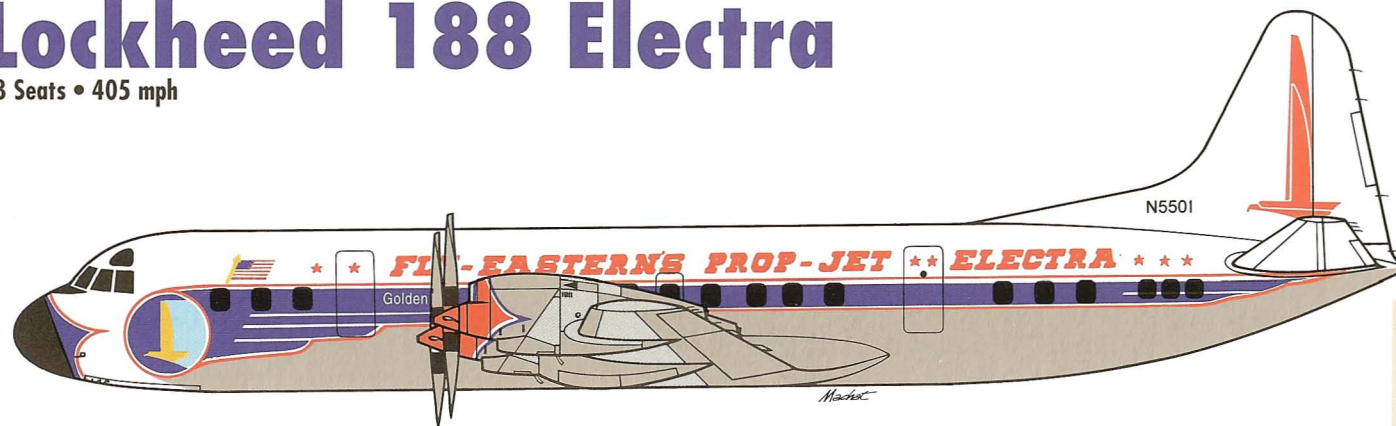
## THE LOCKHEED MODEL 188 ELECTRAS

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
N5501	1005	3 Jan 59	Sold to S.A.M., Colombia, 1 Aug 69
N5502	1007	8 Nov 58	Sold to Air Manila Intl. Philippines, 1 Dec 71
N5503	1008	20 Oct 58	" " " " " 5 Mar 72
N5504	1009	2 Nov 58	Sold to Zantop International, Dec 77
N5505	1010	10 Nov 58	Sold to S.A.M., Colombia, 15 Nov 71
N5506	1011	3 Nov 58	Sold to COPA, Panama, 17 Oct 71
N5507	1012	14 Nov 58	Withdrawn from use, stored Ft Lauderdale, 1970; sold to Zantop International, Jan 78
N5509	1013	29 Nov 58	Sold to S.A.M., Colombia, 22 Oct 69
N5510	1014	13 Jan 59	" " " " 29 Dec 69
N5511	1016	11 Jan 59	Sold to Global Associates, 12 Oct 77
N5512	1017	25 Nov 58	Sold to Zantop International, 10 Oct 77
N5513	1018	16 Dec 58	Sold to Winner Airways, 6 Apr 70
N5514	1020	13 Feb 59	Sold to Fiesta Air, 27 Apr 72
N5515	1021	2 Feb 59	Sold to Air Manila International, 1 Dec 72
N5516	1022	19 Jan 59	Sold to Zantop International, Dec 77
N5517	1023	18 Jan 59	Sold to Plymouth Leasing, 9 Nov 77
N5518	1026	14 Feb 59	Leased to Global Associates, 8 Jul 77, and sub-leased to U.S. Navy, same date; sold to Atlas Aircraft Corp., 10 Mar 81
N5519	1029	26 Feb 59	Sold to S.A.M., Colombia (HK 555) 21 Nov 69; re-possessed Feb 77 (as N5519E); sold to American Jet Industries, 9 Sep 77
N5520	1030	28 Feb 59	Sold to S.A.M., Colombia, 25 Nov 71; re-possessed Mar 77; broken up
N5521	1032	12 Mar 59	Leased to Overseas National Airways, July 68-40 Oct 68; sold to Lineas Aéreas Paraguayas (L.A.P.) 18 Feb 69
N5522	1033	3 Feb 59	Sold to Zantop International, 12 Dec 77
N5523	1034	25 Feb 59	" " " " 9 Dec 77
N5524	1036	26 Feb 59	Sold to Aeroservicios de California, Mexico (XA-FAM) 18 Dec 72
N5525	1038	28 Mar 59	Sold to Reeve Aleutian Airways, 19 Oct 77
N5526	1042	8 Apr 59	Sold to Ecuatoriana, 6 Jun 69
N5527	1043	16 Apr 59	Sold to S.A.M., Colombia (HK691) 27 Nov 70; repossessed 23 Mar 77; sold to Aeroservicios de California, Mexico (XA-SAM) Apr 77
N5528	1045	27 Apr 59	Sold to American Jet Industries, Dec 77
N5529	1048	7 May 59	
N5530	1053	20 May 59	
N5531	1055	26 May 59	Sold to S.A.M., Colombia (HK 692) Nov 70; re-possessed 1 Mar 77 (as N5530E) 8 Apr 77; leased to APSA (Peru) 18 July 77 (T1-ALK)—31 Dec 77; Sold to MCA Leasing Corp., 17 Feb 78 (N429MA)
N5532	1060	2 Jun 59	Destroyed by bomb-explosion, Boston, 2 July 76
N5533	1062	8 Jun 59	Sold to SAHSA (Honduras) Jun 69
N5534	1066	25 Jun 59	Crashed on take-off at Boston, 4 Oct 60
N5535	1068	9 Jul 50	Sold to American Jet Industries, 17 Oct 70
N5536	1071	27 Jul 59	Sold to American Jet Industries, 30 Nov 70
N5537	1075	13 Aug 59	Sold to International Air Leases, 30 May 74
N5538	1078	20 Aug 59	Sold to Falconair, Sweden, 16 Sep 69
N5539	1080	28 Aug 59	Sold to Lineas Aéreas Paraguayas (L.A.P.) 15 Dec 68 (N5539 re-reg. as ZP-CBZ)
N5540	1088	17 Sep 59	Sold to International Aerodyne, 14 Nov 68
N5541	1098	14 Oct 59	Sold to International Aerodyne, 11 Oct 68



# Lockheed 188 Electra

98 Seats • 405 mph



Engines	Allison 501-D13 4,050 ehp (x4)
MGTOW	116,000 lb.
Max. Range	2,500 miles
Length	105 feet
Span	99 feet

The superior economics of the prop-jet Electra made it an immediate success on all the short-haul and medium-haul routes, mainly in the east but also along the Pacific coast. By the end of 1959, almost 100 were in service, an impressive beginning, bearing in mind that the first aircraft was delivered to American Airlines on 5 December 1958, just one day less than a year after its maiden flight. Lockheed's efficient production rate enabled it to surpass the sales figures of the British Bristol Britannia and the Vickers Vanguard which had preceded the Electra in design and initial production.



Size comparison with the L 1049G (p.53)



But pride came before a fall. No sooner had American started service in January 1959, when one of its Electras crashed. Then, on 28 September a Braniff Electra crashed at Waco, Texas, and on 17 March 1960, a Northwest Electra crashed in Indiana. A Federal Aviation Agency inspection revealed flaws in the wing structure, and although there was considerable pressure to ground the entire fleet, the decision was made on 25 March 1960 to keep them in service, but at a reduced cruising speed, from 400 mph to 316, then to 295 mph.

Lockheed undertook an enormous modification program, at a cost of about \$25 million. The speed restrictions were removed on 31 December 1960 and the Electra II, or "Super-Electra," returned to full service performance on 24 February 1961.





# The First Jet

Eddie Rickenbacker approved a flurry of orders for propeller-driven aircraft in 1955: 20 more Douglas DC-7Bs, and (see page 64) 40 prop-jet Lockheed Electras. On 1 September the New York-San Juan service was improved to a daily Super-Constellation service frequency, and an interchange service was agreed with Northwest Airlines to extend the Miami-Chicago service to the Twin Cities. Traffic density on all the short-haul routes was increasing beyond the scope of the Martin 404 fleet, and the decision was made to add a fleet of Convair 440s (see page 63).

But with the October 1955 Pan American order for 45 big jets, the writing was on the wall. Any airline aspiring for leadership in the highly competitive U.S. domestic airline industry had to beat the proverbial pathway to the jet manufacturer's door; and Captain Eddie was not the type of man to be left behind. The choice was either the Boeing 707 or the Douglas DC-8; and although the Pan Am order had favored Douglas (25:20), Boeing had a head start, as the Long Beach company had dragged its feet in developing plans for a jet airliner, having pursued a prop-jet solution to the needs of the next generation.

Then followed an episode in aircraft procurement that could only have happened at that time and only because of the individuals involved. The aviation business had been quite small

before the Second World War; and everyone, especially in the higher echelons, knew each other. Multi-million contracts were agreed with a telephone call. In the summer of 1955, some old-timers, Bill Allen at Boeing, Donald Douglas, and Eddie Rickenbacker indulged in negotiations for a fleet of big jets for Eastern Air Lines.

The two manufacturers had to answer streams of questions, almost entirely by telephone, from Captain Eddie, endlessly asking for more and better technical refinements, more and more performance guarantees. Eventually—so the story goes—Rickenbacker challenged Don Douglas by asserting that Boeing had guaranteed a certain performance figure and could Douglas guarantee to match or exceed it. After a few days, Don declared that Douglas would work towards that target but would not guarantee it, even if Boeing did. In the final telephone call, Eddie asked Don point-blank, "Are you telling me that you can't guarantee those numbers?" Douglas replied, "No, Eddie, I'm afraid I can't. The response was "Good, you just sold twenty airplanes."

Eastern ordered 20 **DC-8-21s**, with an option on ten more, on 7 December 1955. The first service, New York-Miami, was on 24 January 1960. DC-8s replaced Electras on the Puerto Rico route on 24 April, and on the New York-Bermuda route on 14 August 1960.



Eastern's first Golden Falcon Jet, N 8601, showing the new logo on the tail. (photo courtesy Roger Bentley)

## DOUGLAS DC-8 FLEET

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
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### DC-8-21

N8601	45422	3 Jan 60	Sold to Air Spain, 7 Jan 71 (EC-BXR)
N8602	45423	22 Jan 60	" " " 11 Apr 72 (EC-CAD)
N8603	45424	14 Feb 60	" " " 19 May 73 (EC-CDB)
N8604	45425	19 Feb 60	Sold to Concare Aircraft Leasing Corp. 7 Sep 73
N8605	45426	9 Apr 60	Sold to Air Spain, 1 Dec 71 (EC-BZQ)
N8606	45427	26 Apr 60	" " " 7 Jun 62 (EC-CAM)
N8607	45428	22 May 60	Crashed into Lake Pontchartrain, 25 Feb 64
N8608	45429	8 Aug 60	Sold to Air Spain, 11 Apr 73 (EC-CDA); repossessed 13 Jun 76, sold to J.H. Goodwin & Associates, 24 Nov 76
N8609	45430	9 Oct 60	Sold to Concare Aircraft Leasing Corp. 1 Aug 73
N8610	45431	23 Oct 60	Sold to Concare Aircraft Leasing Corp. 10 Jul 73
N8611	45432	28 Jan 60	Leased to Aeronaves de Mexico, 1 Nov 60; damaged beyond repair, aborted take-off, Idlewild, NY, 19 Jan 61
N8612	45433	15 Nov 60	Sold to Concare Aircraft Leasing Corp. 7 Sep 73
N8613	45434	28 Jul 61	" " " " " 1 Aug 73
N8614	45435	15 Aug 61	" " " " " 6 Jun 73
N8615	45436	6 Sep 61	" " " " " Dec 73
N8617	45437	23 Oct 61	" " " " " 7 Sep 73
N8618	45438	-	Never built; order cancelled.
N8619	45439	-	

### DC-8-50

N8780R	45628	11 Dec 64	Leased from Bank of America, purchased 2 Jan 68; sold to Interswede Aviation, 23 Dec 71 (SE-DCR); repossessed 1 Mar 72; sold to Kar-Air, Finland, 2 Jun 72 (OH-KDM)
-	45633	-	Ordered but not delivered; to Aeronaves de Mexico, 10 May 62 (XA-NUS); crashed Lake Texcoco, 24 Dec 66
N8781R	45648	3 Apr 64	Leased from Trans Caribbean Airways, 3 Apr 64, purchased 24 Apr 64; sold to Bank of America, 24 Apr 64; purchased, 1 Jan 68; sold to Interswede Aviation, Nov 71 (SE-DCT); repossessed 1 Mar 72; sold to Air Jamaica, 8 May 72 (6Y-JGE)
N8779R	45760	30 Dec 64	Sold to Douglas Aircraft, 30 Dec 70

### DC-8-55F

N4904C	45668	12 Dec 67	Leased from Capitol International Airways, re-registered N8740; returned to Capitol 29 Apr 68
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### DC-8-55F

N4905C	45805	30 Nov 65	Leased from Capitol International Airways; returned 30 Apr 66
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# Douglas DC-8-21

179 Seats • 590 mph



The British **de Havilland Comet** jet airliner had set the stage for the advent of the Jet Age as early as May 1952, when a B.O.A.C. Comet 1 almost halved the journey time between London and South Africa. But this turned out to be more of a dress rehearsal, as after almost two years of service, a structural fault was discovered, and this gave the U.S. manufacturers the chance they needed to recover the technical advantage that the British had come so close to snatching away from the mighty American industry.

**Pan American Airways**, led by the visionary Juan Trippe, shook the aviation world on 13 October 1955 when it ordered 45 big jet airliners, 25 of which were Douglas DC-8s. This slight advantage was no doubt because of Pan Am's long experience with working with the Long Beach company, whereas Boeing was relatively new to the jet airliner business. At the time, Pan American dominated the world's airways and any decision it made reverberated throughout the globe.

The **Douglas DC-8-10** made its first flight on 30 May 1958, just five months after the Boeing 707 had entered service with Pan Am. In spite of Seattle's lead, many airlines remained faithful to their old friends in California. Two major airlines, United and Delta, started DC-8 service on 18 September 1959.

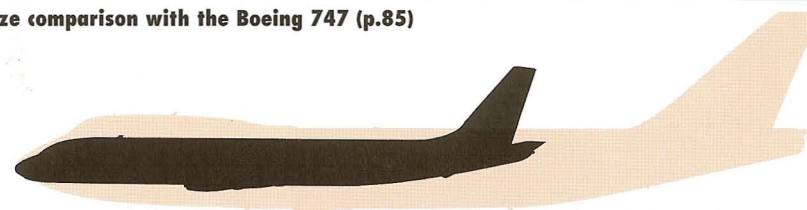
The two manufacturers entered into a competitive battle of giant proportions. In spite of Douglas's ability to "stretch" the DC-8 (see page 79), Boeing won the day in ultimate sales. The performance figures of the two rival airliners were roughly the same; but interestingly, more DC-8s seem to have lasted longer than the 707s of which more than twice as many were sold.

*Artist's Note: The Douglas DC-8 shared the same general design as Boeing's 707, with some identifiable differences. The windshield had only one large "eyebrow" window v. the 707's two smaller ones (see the 720, page 71) and the engine pylons had straight leading edges. The wing sweepback angle was 30° compared to the 707's 35° and the window line featured larger windows, one per seat row, in contrast with the 707's smaller and more numerous series along the fuselage*

<b>Engines</b>	<b>Pratt &amp; Whitney JT-4A-3</b>
	<b>15,000 lb. thrust (x 4)</b>
<b>MGTOW</b>	<b>140 tons</b>
<b>Max. Range</b>	<b>4,000 miles</b>
<b>Length</b>	<b>151 feet</b>
<b>Span</b>	<b>142 feet</b>



**Size comparison with the Boeing 747 (p.85)**



*This DC-8-21 is pictured at New York's Idlewild (JFK) Airport in October 1960. Note slightly different logo colours.  
(photo by Art Carter)*



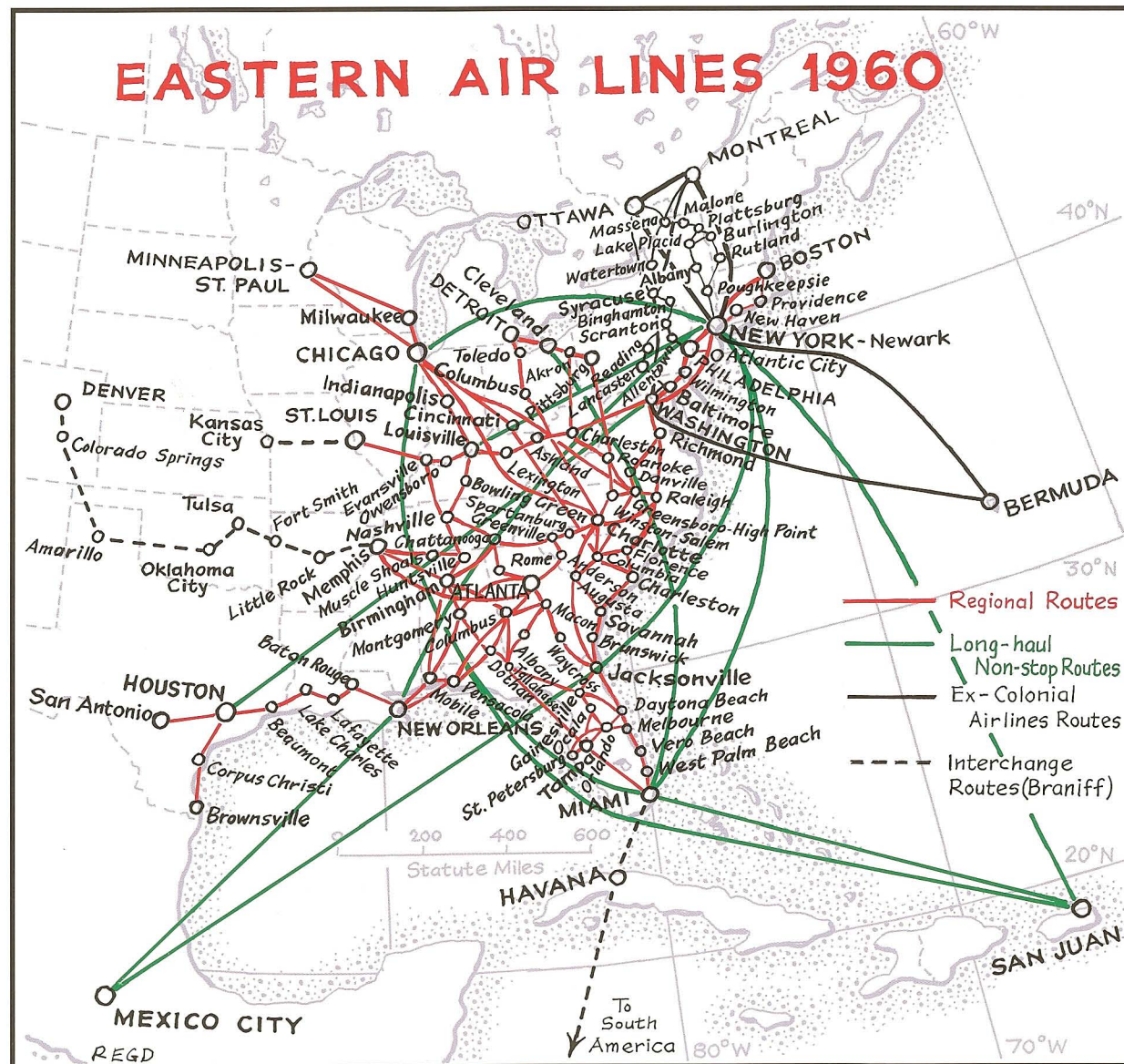
# Air Bus

Eastern Air Lines gained instant and long-lasting fame in the airline world when it started its famous Air-Shuttle Service (see opposite page) in 1961. Less well-remembered, but none-the-less appreciated at the time, was the Air Bus service that started on 13 October 1960. This was to promote vacation traffic from selected cities on the Eastern network to Florida. The beneficiaries were Cleveland, St. Louis, and Pittsburgh. Air Bus customers could fly to Miami for \$40.00, which was 26% less than the day tourist fare, and 15% less than the night tourist fare.

The \$40.00 was equal to the bus fare (which involved a 25-hour journey time); \$46.00 by rail (and 31 hours); or an estimated three days and about \$45.00 by car, including meals and motels. The aircraft used were Lockheed 1049 Super Constellations, one of which is pictured opposite.



Malcolm McIntyre, seen here with his wife, en route to Miami, was appointed president of Eastern Air Lines on 1 October 1959.





# Air-Shuttle



This Lockheed Super Constellation carried one of Eastern Air Lines's more unusual color schemes, inviting customers to fly by its innovative low-fare Air Bus.  
(Photo courtesy Art Carter)

The world's first no-reservation, just-walk-on, air shuttle service opened between the cities of São Paulo and Rio de Janeiro, Brazil, on 6 July 1959. This imaginative and innovative idea, quickly called the **Ponte Aérea**, or Air Bridge, was extremely popular on one of the world's busiest air routes, linking as it did the then ten-million-population commercial metropolis of São Paulo with the "ciudad maravillosa."

Eastern Air Lines echoed the idea, beginning its no-reservations **Air-Shuttle** service on 30 April 1961. Sixteen 95-seat Lockheed 1049Cs were allocated to the service, which began with a frequency of flights every two hours during the day between New York and Washington, and between New York and Boston. The standard fare to Washington was \$14.00, to Boston \$12.00. Tickets could be bought at the airports, where passengers just stood in line at the gates; or they could be purchased on board during the flight. Such was the popularity of the service that frequencies were doubled to Boston in August, and doubled to Washington in September.

Also, as the reproduction of the simple ticket shows, the fares were even modified further to offer a truly bargain price. One remarkable feature of the service was that every seat was guaranteed. As its popularity grew, extra sections were added to each scheduled on-the-hour, every-hour departure, and the guarantee was genuine. There were several cases when a 95-seat Connie carried a single passenger. This was operationally uneconomic; but was worth tens of thousands of dollars in the advertising savings generated by the free publicity accorded by the media.

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**DEPARTURE TIMES**

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Departures every hour on the hour, 7 AM-10 PM  
7 AM flights do not operate Sat. and Sun.

**NEWARK-BOSTON • BOSTON-NEWARK**  
via the Newark and Logan airports  
Departures every hour on the half hour, 7:30 AM-10:30 PM  
7:30 AM flights do not operate Sat. and Sun.

**NEW YORK-WASHINGTON**  
**WASHINGTON-NEW YORK**  
via Eastern's La Guardia "Air-Shuttle" Terminal and Washington National Airport  
Departures every hour on the hour, 7 AM-10 PM  
7 AM flights do not operate Sat. and Sun.

**NEWARK-WASHINGTON**  
**WASHINGTON-NEWARK**  
via the Newark and Washington (National) airports  
Departures every 2 hours on the half hour, 7:30 AM-7:30 PM  
7:30 AM flights do not operate Sat. and Sun.

**BOSTON-WASHINGTON**  
**WASHINGTON-BOSTON**  
via the Logan and Washington (National) airports  
Departures at 7:30 AM, 11:30 AM, 2:30 PM, 5:30 PM, 8:30 PM  
7:30 AM flights do not operate Sun.,  
8:30 PM flights do not operate Sat.

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**NEWARK-WASHINGTON** \$12 non-rush hours \$15 rush hours

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# The First Boeing

Like many other airlines in the early 1960s, Eastern found that it had a long range jet that was ideal for routes to Bermuda, Mexico City, or San Juan, but was just too much airplane for the majority of its inter-city pairs within the eastern third of the United States. Its Lockheed Electras were fine for the short routes, but were seen to be a little on the slow side for the medium-range distances. The ideal airliner would be the Boeing 727 tri-jet which, like the British de Havilland Trident, would not be available until 1964. But traffic was booming and an interim solution had to be found.

The answer was a scaled-down Boeing 707, Series 720. Eastern ordered ten in August 1960 and made an agreement in January 1961 with the Prudential Insurance Company for a lease-purchase arrangement over a period of ten years. The cost, with spare parts, was \$47,750,000. Eastern's first 720 service was on 24 September 1961, from New York to Miami, stopping at Jacksonville.

## Air-Shuttle Popularity

Meanwhile, all eyes were on the Air-Shuttle service (see pages 68-69) which was succeeding by leaps and bounds. A direct Shuttle from Washington to Boston started in February 1962, and such was the intensity of the service that five Douglas DC-7Bs and 33 Super Constellations were allocated to cope with the demand. No less than nine airlines served the New York-Washington market, but Eastern's Air-Shuttle beat them all. A record was set on 25 November 1962, when 13,439 passengers were carried on 129 flights in one day. Washington-Boston was discontinued on 25 April 1965 but the main two routes were upgraded to Electras on 1 August of that year, and all first sections of the on-the-hour, every-hour, schedules were served by that prop-jet by 1 October.

But all was not well with the airline as a whole. In 1961 and also in 1962, Eastern lost \$15 million. Rumours spread about a possible merger with American Airlines, and an official application was made to the C.A.B. on 23 January 1962. This was rejected in April 1963, as there were fears, no doubt, that such a merger (of two of the four biggest airlines in the world) could create a dominating near-monopoly situation.



## EASTERN'S BOEING 720-025s

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8701E	18155	25 Aug 61	Purchased 28 Oct 66, sold to Boeing, 20 Sep 69
N8702E	18156	25 Aug 61	" " " " " " 21 Sep 69
N8703E	18157	2 Feb 62	Purchased 1 Jun 64; " " " 19 Jun 70
N8704E	18158	20 Sep 61	Purchased 28 Oct 66; " " " 25 Sep 69
N8705E	18159	27 Sep 61	" " " " " " 27 Jan 70
N8706E	18160	6 Oct 61	" " " " " " 21 Aug 69
N8707E	18161	17 Oct 61	" " " " " " 20 Nov 69
N8708E	18162	8 Nov 61	" " " " " " 20 Oct 69
N8709E	18163	23 Oct 61	" " " " " " 16 Jan 70
N8710E	18164	23 Oct 61	" " " " " " 25 Jan 70
N8711E	18240	9 Jan 62	Sold to Boeing, 22 Jun 70
N8712E	18241	13 Nov 61	Purchased 28 Oct 66; sold to Boeing, 19 Jan 70
N8713E	18242	22 Nov 61	Sold to Boeing, 17 Jun 70
N8714E	18243	8 Dec 61	" " " 24 Jun 70
N8715E	18244	16 Dec 61	" " " 15 Jun 70

Aircraft N8701E – N8710E and N8712E at first leased from Prudential Company, until purchased by Eastern



One of Eastern's Boeing 720s, which entered service on 24 September 1961.



# Boeing 720

127 Seats • 600 mph



*Artist's Note: Often mistaken for the original Boeing 707-120, the 720 was shorter by four seat rows, and was identifiable by its single, rather than double, over-wing emergency exit on each side. Eastern's 720s retained the forward-facing VHF probe antenna at the top of the vertical stabilizer, whereas most 720 operators did not*

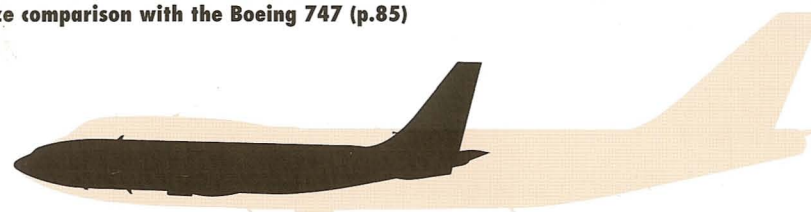
<b>Engines</b>	<b>Pratt &amp; Whitney JT3 C-7</b>
	<b>12,500 lb. thrust (x 4)</b>
<b>MGTOW</b>	<b>115 tons</b>
<b>Max. Range</b>	<b>4,000 miles</b>
<b>Length</b>	<b>137 feet</b>
<b>Span</b>	<b>131 feet</b>

By the 1960s, the leading manufacturers of civil airliners were beginning to design short- and medium-haul jet airliners. The technology of jet engine construction had advanced to the stage whereby the operating costs were acceptably low enough to allow for economical operations on stages other than the long-haul routes where the speed of the jets was more demonstrable. The twin-jet French Sud Caravelle went into service with Air France on 6 May 1959, to start a revolutionary design characteristic—engines mounted on the rear of the fuselage. The British short-haul airline, B.E.A., reacted to this competition with a short-haul version of the pioneering de Havilland Comet, the Series 4B version, on 1 April 1960.

United Air Lines had ordered 20 Caravelles in 1960, and started service on 14 July 1961. There was much reluctance on the part of the U.S. industry, manufacturing and operating, to encourage wide-scale imports of a foreign airliner; and although both Boeing and Douglas drawing-boards were busy with a trijet and a twin-jet solution to the short- and medium-haul problem, respectively, Boeing came up with a partial solution. It shortened the fuselage of the now highly successful four-engined Boeing 707 to create the **Boeing 720**. The reduction was only 8 feet, and the seating was only about 14–16 fewer; but Boeing astutely compensated for this modest improvement by stressing the commonality with the 707, which had the same wing and the same fuselage cross-section. This was the beginning of a great family concept which was to secure Boeing's leadership for almost half a century.

The Boeing 720 went into service with United Air Lines on 5 July 1960, with American following on 31 July. Eastern came along soon afterwards, as narrated on page 70.

**Size comparison with the Boeing 747 (p.85)**



**THE BOEING 707'S**

Series	Engines		Dimensions (ft)		All-up Wt. (tons)	Seats	Range (St. Miles)	First Service	
	Type	Thrust (lb)	Length	Span				Airline	Date
707-100	JT3C-6	13,500	145	131	128	181	3,000	Pan Am	26 Oct 58
707-138	JT3C-6	13,500	135	131	129	120	4,500	QANTAS	5 Sep 59
707-227	JT4A-3	15,800	145	131	129	181	4,000	Braniff	20 Dec 59
707-300	JT4A-9	15,800	145	142	158	189	4,000	Pan Am	20 Jul 59
707-320B	JT3D-3	18,800	153	146	158	202	5,500	Pan Am	4 Jun 62
707-400	Conway RR508	17,500	153	146	158	202	4,500	BOAC	27 May 60
720	JT3C-7	12,500	137	131	115	167	3,000	United	5 Jul 60
720B	JT3D-1	17,500	137	131	117	167	4,800	American	12 Mar 61



# Short-Haul Tri-Jet

Thanks to management incompetence by the British Hawker Siddeley Aircraft Company, which had taken over de Havilland (the same that had built the world's first jet airliner, the Comet) the design of the D.H.126 Trident was compromised to allow Boeing to step in with a similar design and collar the world's market for what was to become one of the best-selling airliners of all time. The Trident first flew on 9 January 1962, but the **Boeing 727** went into service first, even though it first flew thirteen months after the British rival. It was a tribute to the efficient production capability and methods of the Seattle manufacturer, and much of the success was because the 727's fuselage cross-section was the same as the 707's and came off a similar production line.

Eastern Air Lines was the launch customer for the Boeing 727, putting it into service on the Philadelphia-Washington-Miami service on 1 February 1964. It was followed by United Air Lines five days later, and by American on 12 April. Within a year, 727s were to be seen everywhere throughout the United States. Many foreign airlines took advantage of the commonality factor, and Boeing had great success in breaking into the Japanese market, then growing at about 30% per year. Eastern alone, with its "stretched" 727s (see p. 88) had more than 170 of the Boeing tri-jets.

## Change of Command

During the latter 1950s, Eddie Rickenbacker had gradually relaxed his almost dictatorial management style. Still chairman, he had delegated Eastern's day-to-day management to T.F. Armstrong, then, on 1 October 1959, to Malcolm A. McIntyre (see page 68). On the last day of 1963, Captain Eddie retired, two weeks after Floyd D. Hall had, on 16 December, succeeded McIntyre as president and chief executive officer. Then, on 1 March 1964, Arthur D. Lewis took over, and exercised some sweeping management changes, including a "new look" for the aircraft paint schemes. The fares on the ever-popular Air-Shuttle were raised, to meet higher maintenance costs of the older aircraft used, but this did not affect the traffic demand, at least until 20 years later, when AMTRAK improved its rail services.

## EASTERN BOEING 727s

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
<b>Boeing 727-025</b>			
N8101N	18252	28 Feb 64	Leased to ACES, Colombia, 23 Oct 91 (HK-2717X); returned 7 Dec 81; leased, 13 May 82, then sold 15 Aug 82 to Air Niagara
N8102N	18253	15 Nov 63	Leased to Aeronica, Nicaragua, 28 Dec 81; returned 2 Mar 82; sold to World Jet Aircraft Industry, Ltd. Aug 82
N8103N	18254	12 Dec 63	Sold to Kabo Air, Nigeria, 22 Jan 87
N8104N	18255	28 Feb 64	Sold to Air Niagara, Nov 82
N8105N	18256	13 Mar 64	Sold to Kabo Air, 15 Jan 87 (5N-AWX)
N8106N	18257	30 Jan 64	Sold to Trump Shuttle, 7 Jun 89 (N901TS)
N8107N	18258	24 Jan 64	Sold to Kabo Air, 30 Jan 87 (5N-AWY)
N8108N	18259	12 Mar 64	Sold to Aviation Sales, 30 Mar 82
N8109N	18260	27 Mar 64	" " " 15 Jan 82
N8110N	18261	26 Mar 64	Sold to Charlotte Aircraft Corp., 1 Jul 81
N8111N	18262	30 Apr 64	Sold to Aviation Sales, 27 Sep 82
N8112N	18263	29 May 64	" " " 15 Jan 82
N8113N	18264	23 Jun 64	" " " 28 Apr 82
N8114N	18265	26 Jun 64	" " " 29 Jan 82
N8115N	18266	28 Jul 64	Sold to ACES, Colombia, 1981 (HK-2774), but never used and returned 19 Jan 82. Sold to Aviation Sales, 20 Jun 82
N8116N	18267	7 Aug 64	Sold to Trump Shuttle, 7 June 89 (N902TS)
N8117N	18268	2 Sep 64	" " " 7 June 89 (not used)
N8118N	18269	14 Sep 64	Sold to Aero Peru, 20 May 74 (OR-R1801)
N8119N	18270	7 Oct 64	Sold to Monarch Aviation, 1 Sep 82
N8120N	18271	19 Oct 64	Sold to Federal Express, 10 Feb 89 (N502FE)
N8121N	18272	12 Nov 64	Sold to Trump Shuttle, 7 Jun 89 (N903TS)
N8122N	18273	13 Nov 64	Sold to Federal Express, 12 May 89 (N503FE)
N8123N	18274	4 Dec 64	" " " 1 Jun 89 (N504FE)
N8124N	18275	18 Dec 64	Sold to Monarch Aviation, 28 Feb 82
N8125N	18276	6 Jan 65	Sold to Federal Express, 30 Sep 88 (N505FE)
N8126N	18277	22 Jan 65	Leased to United Technologies, 15 Jan 84; returned, Jun 85; sold to Federal Express, 10 Nov 84 (N506FE)
N8127N	18278	12 Feb 65	Leased to LACSA (Costa Rica) 1 Jul 88; returned 31 Dec 88; sold to FedEx, 14 Apr 89 (N507FE)
N8128N	18279	10 Mar 65	Sold to Federal Express, 14 Nov 88 (N508FE)
N8129N	18280	7 Apr 65	Leased to TAN Airlines (Honduras), 20 Sep 88; returned Jan 89; sold to FedEx 27 Feb 89 (N509FE)
N8130N	18281	25 May 65	Sold to ACES, Colombia, 2 Mar 81 (HK-2541)
N8131N	18282	9 Jun 65	Leased to Alaska Airlines, 9 Jun 65; returned Oct 65; leased to ACES, Colombia, 1 Nov 81 (HK-2705X); returned 26 Nov 83 as N4556W and reregistered to N8131N, Sep 86; sold to Federal Express, 20 Dec 88 (N510FE)

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8132N	18283	16 Jul 65	Sold to Federal Express, 19 Jan 89 (N511FE)
N8133N	18284	28 Jul 65	Sold to Aeronica, Nicaragua, 28 Aug 81 (YN-BXW)
N8134N	18285	25 Aug 65	Leased to Alaska Airlines, Sep 69; returned Nov 69; sold to Federal Express, 30 May 88 (N152FE)
N8135N	18286	24 Sep 65	Sold to Aerostar, 21 Jul 82; repurchased, 4 Aug 83; sold to FedEx, 20 Jul 88 (N153FE)
N8136N	18287	13 Oct 65	Sold to ACES, Colombia, 1 Apr 81 (HK-2604); sold back 1 Apr 84; sold to FedEx, 13 May 88 (N154FE)
N8137N	18288	27 Sep 65	Sold to Federal Express, 20 May 88 (N155FE)
N8138N	18289	10 Nov 65	Sold to Aerostar, 9 Dec 81; repurchased 14 Aug 83; sold to FedEx, 20 Jul 88 (N156FE)
N8139N	18290	30 Nov 65	Sold to Aviation Sales, 20 Feb 82
N8140N	18291	10 Dec 65	Sold to Aerostar, 12 Jun 81; repurchased 8 Aug 83; sold to Trump Shuttle, 7 Jun 89 (N904TS)
N8141N	18965	15 Dec 65	Sold to Amerijet Leasing, Inc., 10 May 89
N8142N	18966	21 Dec 65	Sold to Trump Shuttle, 7 Jun 89 (N905TS)
N8143N	18967	15 Jan 66	Sold to Trump Shuttle, 7 Jun 89 (N906TS)
N8144N	18968	25 Jan 66	Sold to Cruzeiro do Sul, Brazil, 11 Jul 74 (PP-CJL) Leased to Alaska Airlines, 17 Sep 71; returned 27 Oct 71; sold to Cruzeiro do Sul, 20 Jun 74 (PP-CJK)
N8145N	18969	26 Jan 66	Sold to Quebecair, 28 Jun 74 (C-GQBE)
N8146N	18970	10 Feb 66	Sold to Express One Intl., 1 Aug 89 (N280NE)
N8147N	18971	15 Feb 66	" " " 1 Aug 89 (N290NE)
N8148N	18972	18 Mar 66	Sold to Trump Shuttle, 7 Jun 89 (N907TS)
N8149N	18973	25 Mar 66	Sold to Express One Intl., 1 Aug 89 (N300NE)
N8150N	18974	15 Apr 66	Sold to Express One Intl., 1 Aug 89 (N300NE)
<b>Boeing 727-025 QC</b>			
N8151G	19298	18 Dec 66	Sold to Federal Express, 24 May 82 (N116FE)
N8152G	19299	18 Dec 66	Leased to Air Panama, 7 Feb 81-20 Jul 81 and 13 Sep 81-22 Sep 81; sold to Federal Express, 26 Apr 82 (N117FE)
N8153G	19300	21 Dec 66	Sold to Federal Express, 1 May 81 (N118FE)
N8154G	19301	27 Jan 67	" " " 14 Jul 81 (N119FE)
N8155G	19302	2 Feb 67	Sold to Charlotte Aircraft Corp., 19 Jan 79
N8156G	19356	10 Feb 67	Sold to Federal Express, 28 Aug 81 (N120FE)
N8157G	19357	6 Feb 67	" " " 31 Jul 81 (N121FE)
N8158G	19358	18 Mar 67	" " " 28 Jul 81 (N122FE)
N8159G	19359	24 Feb 67	" " " 1 Jul 81 (N123FE)
N8160G	19360	9 Mar 67	" " " 5 Nov 81 (N124FE)
N8161G	19717	30 Sep 67	" " " 3 Dec 82 (N125FE)
N8162G	19718	15 Oct 67	" " " 31 Aug 82 (N126FE)
N8163G	19719	28 Oct 67	" " " 15 Dec 82 (N127FE)
N8164G	19720	7 Nov 67	" " " 4 Nov 82 (N128FE)



# Boeing 727-100

107 Seats • 580 mph

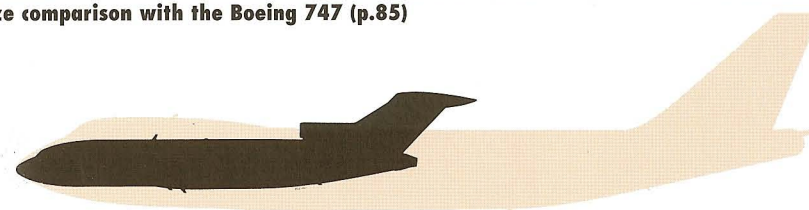


## BOEING 727-025QC (cont)

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8165G	19721	15 Nov 67	" " " 22 Aug 80 (N130FE)
N8166G	19722	20 Nov 67	" " " 30 Jun 82 (N131FE)
N8167G	19850	2 Dec 67	" " " 30 Jul 82 (N132FE)
N8168G	19851	9 Jan 68	" " " 23 May 80 (N133FE)
N8169G	19852	23 Jan 68	" " " 8 Jul 80 (N134FE)
N8170G	19853	31 Jan 68	" " " 29 May 80 (N135FE)
N8171G	19854	10 Sep 68	Sold to Federal Av. Admin (FAA), 19 Oct 77 (N40)
N8172G	19855	28 Sep 68	Sold to Federal Express, 3 Sep 82 (N136FE)
N8173G	19856	3 Oct 68	Leased to Federal Express, 24 Sep 80
N8174G	19857	15 Oct 68	" " " 4 Nov 80
N8175G	19858	18 Oct 68	" " " 23 Dec 80

Engines	Pratt & Whitney JT-8D
	14,000 lb. thrust (x 3)
MGTOW	80 tons
Max. Range	1,700 miles
Length	133 feet
Span	108 feet

## Size comparison with the Boeing 747 (p.85)



This view of a Boeing 727-200 makes an interesting complement to Mike Machat's rendering. (see page 88 for fleet list)



# The Long Routes . . . .

On 1 December 1963, 59,641 passengers boarded Eastern's aircraft in one day, setting a world record. On 27 October it began a joint service with Braniff International Airways (in what would now be termed a code sharing agreement), with Braniff's Boeing 707s, from New York to South America, via Miami and Panama, to reach Bogota, Colombia, and Lima, Peru.

On 17 December 1965, Eastern acquired a one-third interest in the Peruvian **Líneas Aéreas Nacionales, S.A. (LANSA)**. This venture did not last very long. With two fatal Electra crashes within eighteen months, it is best forgotten. In January 1966, the Mexican service was extended to **Acapulco**, and in July of that year, non-stop DC-8 service to that popular resort city began from New York.

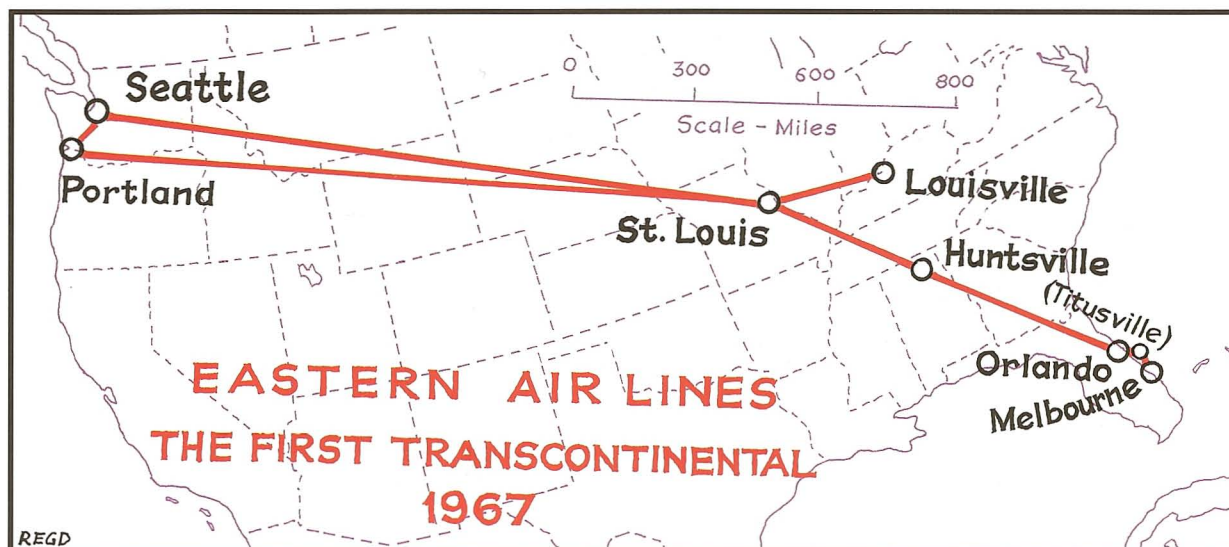
On 13 June 1967, after a favorable C.A.B. Route award, using Boeing 727-100s, with extra tankage, service started to connect Florida with **Seattle**, via Huntsville and St. Louis. The Huntsville stop was associated with the nation's Space Program.



Floyd D. Hall succeeded Malcolm McIntyre as Eastern's President and C.E.O. On 16 December 1963. Eddie Rickenbacker retired as Chairman and General manager on 31 December.



*The Boeing 727 was not designed originally for non-stop transcontinental operations—but in Eastern's case, for the route to Seattle, necessity was the mother of invention.  
(Courtesy Bill Hirsch)*





# ... and the Short

During the 1960s, the air route patterns in the United States were changing. The Local Service airlines, which had been created during the post war years, had expanded beyond the original role that had been envisioned for them. They had gradually added longer routes, often skipping the small communities that they were required to serve, usually with time-honored Douglas DC-3s. By the 1960s, they were operating modern turbo-prop types and even, by 1966, Douglas DC-9 and BAC One-Eleven jets. In the northeast, Mohawk Airlines was actually competing with its giant neighbour, American Airlines, and as a matter of mutual convenience, and approved by the C.A.B., Eastern transferred some of the former Colonial routes in that area to Mohawk.

This became a trend, as the trunk airlines wanted to dispose of the shorter routes of low traffic density serving small communities; while the Locals, now calling themselves Regionals, wished to expand their territories. Some more points disappeared from the Eastern map, in the southern states, and these were taken over by Southern Airways and Trans Texas Airways.

## Mackey Airlines

Ever since the beginning of sustained airline operations in the United States, there had been services from Florida to the Bahama Islands. As early as 1920, Aeromarine and Aero, Ltd., had flown to Bimini and Nassau, ostensibly for fishermen, but also giving thirsty citizens the opportunity to escape Prohibition in the then British colony. Subsequently, Arthur "Pappy" Chalk had maintained Chalk's Flying Service, claiming, with pardonable exaggeration, to have been the oldest airline in the United States. These operators invariably offered flights only when the demand justified, although credit must be given, especially to Aeromarine, for their enterprising efforts.

Another entrepreneur entered the fray in 1938, when **Midet Aviation** began charter services from West Palm Beach to the Bahamas. After the hiatus of the Second World War, Midet was joined by **Mackey Airlines**, organized by **Joseph C. Mackey**, a former stunt pilot who was the commanding officer of the Army Air Corps base in Miami during the War. Joe Mackey formed his airline on 30 September 1946, under Florida state law, but had to discontinue operations in

February 1947, as the C.A.B. advised that he was subject to international law. The necessary formalities were overcome and on 6 June 1952, Mackey was authorized to begin scheduled services from West Palm Beach and Fort Lauderdale, and this was duly inaugurated on 2 June 1953.

Meanwhile, Midet had gone through the same process, and had been certificated on 6 November 1951, and started service from West Palm Beach to West End, on Grand Bahama Island, on 2 April 1954. Mackey's certificate was renewed and expanded in June 1956 to include other points in the Bahamas and also to serve the West Indies. On 3 December, the two airlines merged, with Joe Mackey in charge.

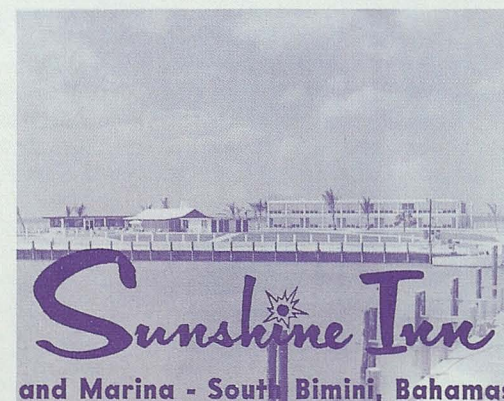
Joe had started in 1946 with three Lockheed Lodestars, and progressed to three Douglas DC-3s by 1955. In 1960, he established a Bahamian Corporation, as a wholly-owned subsidiary, owning a hotel and other facilities at Bimini. On 29 July 1965, by which time the fleet comprised six DC-6s, one DC-4, two DC-3s, and a Beech 18, he sold his airline to Eastern. The merger was agreed to on 22 November 1966, with the exchange of one Eastern share for eight of Mackey—but this resulted in Joe being Eastern's biggest individual shareholder. He had built up his short-haul airline, without mail pay or subsidy, into a viable operation, carrying an average of 300,000 passengers every year, with a 14-year complete safety record. The merger was completed on 8 January 1967.



Colonel Joseph C. (Joe) Mackey



## BIMINI INTERNATIONAL ECONOMY VACATION



Mailing Add.: 500 S.W. 34 St., Ft. Lauderdale, Fla.

**3 DAYS - 2 NITES**

**\$29.95**

**Modified American Plan  
Per Person — Double Occupancy**

Includes:

- Air Conditioned Hotel Room
- Two Breakfasts
- Two Dinners
- Transfers Between Hotel & Airport

**SINGLE RATE: \$36.00**

**Additional Day Rate:**

**\$14 Double Occupancy \$17 Single Occupancy**



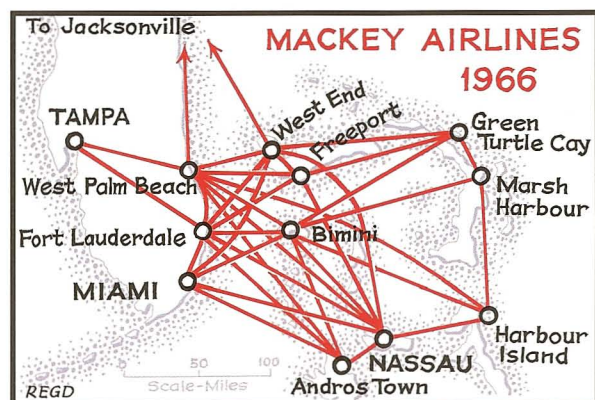
# Bahamas Holidays

As the map on the previous page clearly illustrates, the Bahama Islands offered more destinations than the traditional capital, Nassau, and the fisherman's paradise, Bimini. On Grand Bahama, the enterprising promoter, Billy Butlin, had established one of his holiday camps, and this was one of Mackey's more popular stations, with the airport at Freeport (West End). When Joe Mackey sold out to Eastern, his traffic had built up to such an extent that he had to have aircraft with plenty of seats; and although the Douglas DC-6B was never designed for short-haul work, it was used on the hops across the 50-mile channel directly east of West Palm Beach.

The deal with Eastern (in which Joe acquired a substantial interest) included a clause that restricted him from engaging in any airline activity for a period of five years. If Eastern thought this was merely a formality to cover Mackey's retirement, it was wrong. Five years later, Mackey International went back into business.

## MACKEY AIRLINES DC-6 FLEET

Regn	MSN. No.	Remarks and Disposal
N90712	42865	Acquired by Eastern when Mackey Airlines absorbed into system on 22 Nov. 66. Withdrawn from service in December 67 (except N90895, in May 57, and N90898, in Mar 57)
N90713	42879	
N90714	42891	
N90895	43150	
N90896	43151	
N90898	43218	Acquired 17 Oct 61; sold 1 May 64 to Universal Trading Co. Sold May 64
N90960	44082	



Joe Mackey's little airline (which the Civil Aeronautics Board found difficult to classify, except under "Miscellaneous,") was so successful that he had to replace his Lockheed Lodestars with 28-seat Douglas DC-3s. (photo: Roger Bentley)



The Bahamas Islands, always a popular local destination for weekend vacations for Floridians, expanded as a tourist destination by leaps and bounds during the 1950s and 1960s. Mackey had to operate larger aircraft, Douglas DC-6s, to cope with the demand. (photo: Roger Bentley)



This Mackey Airlines Douglas DC-6 is seen at West End, on Grand Bahama Island (photo courtesy Jon Proctor)



# They Also Served

## Douglas DC-6B

As mentioned previously, Eastern's special seasonal traffic pattern on the Florida routes created a requirement for extra aircraft during the winter season. The airline usually dealt neatly with this requirement by leasing aircraft from other airlines. Among these were some veteran Douglas DC 6B thoroughbreds, and later on, when they could be obtained at a good price, Eastern also purchased some as well.

The Douglas DC-6 series looked very similar to the DC-7 series—some modifications made the identification more difficult. One standard difference was that the Sixes had three-bladed propellers, and the Sevens all had four-bladed props.



One of Eastern's Douglas DC-6Bs, at Miami

(All photos on this page courtesy Roger Bentley collection)

## EASTERN DOUGLAS DC-6B FLEET

Regn	MSN.	Delivery	Remarks and Disposal
No.	Date		
N6521C	43521	Dec 54	Short-term leases from Pan American Airways, for winter season Florida traffic. N6532C also in Dec 55
N6532C	43532	Dec 54	
N6529C	43529	Dec 55	
N6120C	44687	May 57	All withdrawn from service May 62
N6121C	44688	May 57	
N3022C	45107	May 57	
N3023C	45108	Feb 57	
N3024C	45109	May 57	
N3025C	45472	Mar 58	
N3026C	45473	May 58	

## The Trainers

### AERO COMMANDER 500B



One of Eastern's Aero Commanders, used for ten years from 1965 for instrument training.

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N6291X	1207-99	28 Jun 65	Used for instrument training for jet airliners; damaged several times in Florida; sold to Space Coast Aviation, 18 Nov 75
N354MA	1617-211	27 Apr 67	Acquired through Miami Aviation Corp; sold to Joe G. Marrs, 20 Nov 69

### LOCKHEED L-1329 JETSTARS



The Lockheed Jetstar was used as a corporate aircraft.

Regn.	Series	MSN	Period with Eastern
N518L	Jetstar 6	5040	Feb 70-Apr 70
N12241	Jetstar 8	5141	Feb 71-May 73

### NORTH AMERICAN SABRELINER



A North American/Rockwell Sabreliner 60, N968R (MSN 306-2) demonstrator was used by Eastern before the Jetstar.

## The STOL Experiment

Eastern Air Lines could point to a number of occasions in its history when it had reached out for innovative approaches to the airline business. During the 1930s, the idea of "The Great Silver Fleet" had been a departure that caught the public imagination. The autogyro experiment of 1939 foreshadowed helicopter operations that were to be developed a couple of decades later. The Eastern Shuttle was so successful that, if ranked as an individual airline, based on passenger boardings, would have been the seventh largest in the world. In the fall of 1968, it tried again.

The French Breguet company had developed a short take-off and landing (STOL) aircraft, the **Type 941**, that, using a deflected-slipstream technique, could carry 60 passengers, yet needed only short runways for both take-off and landing. It made its first flight on 1 June 1961, and its performance caught the attention of the McDonnell Aircraft Corporation. The aircraft was demonstrated in the U.S. and in 1965, the St. Louis company acquired the license to market it in the States. The Turbomeca Turmo IIID 1,200-shp turboprops were replaced by 1,500 shp General Electric T58s, and the 941 was designated the **McDonnell Douglas 188**—the merger between the two companies coinciding with this negotiation.

For two months in the fall of 1968, Eastern Air Lines operated the 188 on the Shuttle routes, sometimes deliberately using short runways, even demonstrating its field performance on downtown parking lots. American Airlines also conducted similar operations the following year, but the experiment was not continued. The aircraft could not demonstrate sufficient advantage over other airliners. STOL operations did not consist simply of a STOL aircraft. They depended on an entire STOL system: aircraft, airfields, special air routes; and the urban environment, including the public concern for safety and noise restrictions, to fit this requirement, did not exist.



The French-designed McDonnell Douglas MD 188 experimental STOL demonstrator, used by Eastern in the fall of 1968. (All photos on this page, courtesy Roger Bentley collection)



# Short-Haul Twin-Jet

## SST Interlude

In April 1966, Eastern Air Lines made two purchasing announcements. The amount of publicity given to them by the popular press and by the consequent public interest were inversely proportional to their relative usefulness to the airline. In one case, the airline joined the throng of supersonic airliner supporters, and placed a \$200,000 deposit with the Federal Aviation Agency (F.A.A.) for two U.S. SSTs. In November, it ordered two more, and on 5 June 1967, brought the total to six. Where Eastern would have operated them, even if they had been built, and if they had been permitted to operate over land, was never made clear.

Eventually, in the event, the whole project was cancelled, and Eastern was off the hook. But at the time, the deposit money paid was bargain-price advertising. And incidentally, a similar sequence of events followed the initial enthusiasm for the Concorde. Eastern did put its name down for six. Not a single one was sold, although it was put into service by British Airways and Air France.

## Subsonic Sense

The other April 1966 announcement was far more important. This was for 22 Douglas DC-9-10 twin-jet short-haul airliners. The French Caravelle was the world's first short-haul jet airliner, and had proved the efficiency of jet propulsion for short ranges; the British Trident and the Boeing 727 had pitched in with tri-jets, and the British **BAC One Eleven** twin jet had already broken into the United States market. Braniff had been the first U.S. airline, to operate the British twinjet, starting service in April 1965, followed by Mohawk and then American, the latter on 6 March 1966. Both of these two were in direct competition with Eastern over many of its main routes in the northeast—thus Eastern had to react.

The initial order had been from Delta, which was the first DC-9 operator, and there was much speculation as to whether two very similar twin-jets could both succeed. But they did. Eastern put them into service in May 1966. They were the forerunners of a large fleet of the Douglas twins.

## DOUGLAS DC-9-14 FLEET

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8901E	45742	26 Apr 66	Returned to Douglas, 23 Apr 70; leased back to Eastern 23 Apr 71; returned to Douglas 31 May 79 (this aircraft eventually crashed in Colombia, 11 Jan 95)
N8902E	45743	13 May 66	Returned to Douglas, 26 Apr 70; leased back to Eastern 26 Apr 71; returned to Douglas 2 May 72
N8903E	45744	19 May 66	Returned to Douglas, 19 May 70
N8904E	45745	31 May 66	" " " 26 May 70
N8905E	45746	1 Jul 66	" " " 29 Aug 70
N8906E	45747	19 Jul 66	" " " 29 Aug 70
N8907E	45748	29 Aug 66	" " " 31 Aug 70
N8908E	45749	11 Sep 66	Sold to Republic Airlines, 9 Sep 79
N8909E	45770	7 Nov 66	" " " 9 Nov 79
N8910E	45771	27 Oct 66	Crashed at Dade-Collier Airport, Florida 3Feb 79
N8911E	45825	24 Nov 66	Sold to Republic Airlines, 9 Nov 79
N8912E	45829	30 Nov 66	" " " 18 Dec 79
N8913E	45830	23 Dec 66	" " " 21 Dec 79
N8914E	45831	29 Dec 66	" " " 21 Dec 79
N8915E	45832	2 Aug 67	" " " 4 Jan 80

Note: only 15 of the 22 ordered were delivered



*The Dash-30 Series was the most popular of all the DC-9s in Eastern's fleet, and was also the favorite choice of many other leading airlines. Chosen especially for the Shuttle, Eastern was the launch customer. (photo courtesy Roger Bentley)*



# Douglas DC-9-14

65 Seats • 560 mph

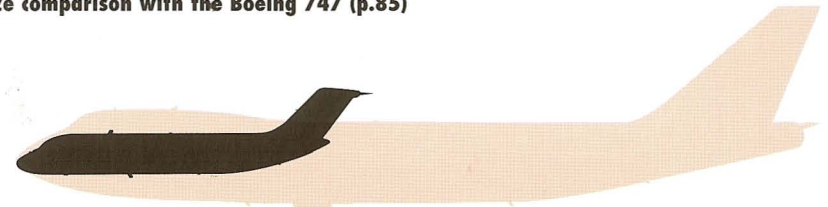


Engines	Pratt & Whitney JT8D-1 (14000 lb. thrust) x 2
MGTOW	90,700 lb.
Max. Range	700 miles
Length	104 feet
Span	89 feet

Whereas Boeing had, in its marketing policy, stressed the commonality features of its line of jet airliners (the 707, 727, 737, and 757 all had the same fuselage cross-section), Douglas emphasized the design aspects of the DC-9 that reduced maintenance costs to a minimum. And this was borne out in practice, to the extent that, together with the respect given to the Douglas name, the Pratt and Whitney JT8D-powered DC-9 sold like the proverbial hot cakes. In fact, the Long Beach factory was overwhelmed with orders and ended up having to pay some compensation for late deliveries.

Eastern loved the DC-9. In total, it had 125 of the Douglas twins, in four variants. Most of them were the 15-foot-longer DC-9-30, which Malcolm MacIntyre, advised by his planning director, Bill Crilly, introduced especially for the famous Air-Shuttle service. Eastern was the launch customer for the -30, the most successful of all the DC-9s, introducing it on the New York-Boston Shuttle on 1 February 1967. Later, the DC-9-51, 14 feet longer still than the -30, came into service on 1 September 1977. (see page 83)

Size comparison with the Boeing 747 (p.85)



This photograph of one of Eastern's earlier DC-9s was taken at Baltimore. (photo courtesy Roger Bentley)



Eastern celebrated the United States Bicentennial by an extra logo on all its aircraft.



# The Stretched Eights

The Douglas company had a long tradition in developing a basic airliner type to create additional variants, usually bigger ones, taking advantage of improved engine performance from Pratt & Whitney. It had done it with the DC-2, which was developed into the DC-3; then the DC-4/6/7 four-engined series. It now did it again, with the DC-8 jet. First the "stretched" **DC-8-61**, with more seats but only transcontinental range; then the **DC-8-62**, with only a modest seating increase, but with intercontinental and trans-ocean range; and finally, the **DC-8-63**, which combined both increments. Many airline operators claimed that to operate this last variant was like "printing your own money." Eastern Air Lines, apparently, joined the queue to the print shop.

## DOUGLAS DC-8-63 SERIES FLEET

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8759	46058	24 Feb 69	Sold to Union de Transports Aériens (UTA), 5 Feb 74 (F-BOLM)
N8760	46074	21 Jun 69	
N8758	46093	6 Nov 69	Sold to Overseas National Airlines (ONA) 25 May 71; returned 22 Nov 71; sold to Balair, Switzerland, 1 May 72 (HB-1DZ)
N8757	46095	15 Nov 69	Sold to Scandinavian Airlines System (SAS), 19 Mar 73 (OY-KTG)
N8756	46096	21 Nov 69	Sold to CP Air, Canada, 26 Sep 72 (CF-CPL)
N8755	46097	14 Dec 69	Sold to UTA, 30 Apr 73 (F-BOLL)
			Sold to SAS, 22 Feb 74 (OY-KTH)

N 8759 passed to International Air Leases, and was the Arrow Air aircraft that crashed, tragically, at Gander, Newfoundland, on 12 Dec 85. N 8756 was destroyed by a bomb at Ndjamena, Chad, on 10 Mar 84



## DOUGLAS DC-8-61 SERIES FLEET

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8778	45848	23 Feb 67	Sold to Japan Airlines, 11 Jun 71 (JA 8050)
N8777	45887	27 Mar 67	
N8776	45888	16 May 67	
N8775	45889	28 May 67	Leased to Capitol International Airways, 12 Jun 71; returned 31 Oct 71; sold to Japan Air Lines (JAL) 30 Jun 73 (JA 8060)
N8774	45894	6 Aug 67	Sold to Japan Airlines, 23 Jul 73 (crashed on approach to Haneda Airport, 9 Feb 82)
N8771	45912	9 Dec 67	Sold to Air Jamaica, 2 Nov 73 (6Y-JGG)
N8770	45913	19 Jan 68	" " " 11 Dec 73 (6Y-JGH)
N8773	45942	12 Apr 68	Sold to National Aircraft Leasing, 27 Dec 73
N8772	45943	19 May 68	Leased 10 May 71; sold to JAL 25 Sep 72 (JA8058)
N8769	45982	29 Mar 68	" 22 Apr 71; " " " (JA8059)
N8768	45983	19 Apr 68	" 19 Mar 70; " " " (JA8057)
N8767	45992	21 May 68	" 6 Jul 70; " " Oct 75 (JA 8057)
N8766	46015	1 Nov 68	" 5 Apr 71; " " " (JA 8067)
N8765	46016	15 Nov 68	Leased to JAL, 16 Oct 72; returned 6 Apr 76; leased to Capitol Intl. Airways (Capitol Air), 19 Jun 76; returned to Eastern 25 Dec 82
N8764	46017	17 Dec 68	Leased to JAL, 21 Nov 72; returned 30 Mar 76; leased to Capitol Intl. (Capitol Air) 1 Aug 76
N8763	46037	19 Dec 68	Leased to JAL, 25 Oct 73; returned 11 Jan 80; leased to Capitol Intl. (Capitol Air) 11 Jan 80
N8762	46038	3 Feb 69	Leased to JAL, 26 Sep 72; returned 28 Mar 76; leased to Capitol Intl. (Capitol Air) 2 May 76
			Leased to JAL, 15 Oct 73; returned 30 Jan 80; leased to Capitol Intl. (Capitol Air) 30 Jan 80

The last five aircraft, N8766-N8762, were repossessed by Bankers Trust Co. on 25 December 82



Eastern's DC-8-61 N8775 taxis out at Baltimore (photo courtesy Roger Bentley)



# Douglas DC-8-61 and -63

250 Seats • 580 mph



*Artist's Note: The 250-seat single-aisled DC-8-60 series was the first to be called the "Jumbo-Jet," although the Boeing 747 was more generally identified with the familiar term. Sleeker "flow-through" nacelles and pylons identified the -62 and -63 series, whereas the DC-8-61 maintained the pylon and engine structure of the earlier -55 fan-jet.*

Whether by luck or inspired design, Douglas was able to extend the DC-8's fuselage, when Boeing could not do the same with its 707, partly because of the latter's greater wing-sweep angle on take-off, when the fuselage would also scrape the ground. Douglas was able to "stretch" the DC-8 by no less than 37 feet. The **DC-8-61** first flew on 14 March 1966, and went into service with United on 24 February 1967. In full economy-class seating (used by the Supplemental airlines) this was an increase from 174 to 252 seats. The **DC-8-62** was only six feet longer than the standard DC-8, but had, for its generation, enormous range—some 6,000 miles. The DC-8-63 offered the full 37-foot stretch, with 5,000 miles range.

**Engines** Pratt & Whitney JT8D-3B  
(18,000 lb. thrust) x 4  
**MGTOW** 164 tons  
**Max. Range** 5,300 miles  
**Length** 187 feet  
**Span** 142 feet

## Size comparison with the Boeing 747 (p.85)



*Eastern DC-8-61, wearing the "hockey stick," taxis out for take-off.*

## THE DOUGLAS DC-8 FAMILY

Series	Engines (P & W)*		Dimensions (ft)		Gross Weight (short tons)	Max Seats	Range (st. miles)	First Service		No. Built
	Type	Thrust (lb)	Length	Span				Date	Airline	
DC-8-10	JT3C-6	13,000	151	142	137	179	3,800	18 Sep. 59	Delta	23
DC-8-20	JT4A-3	15,000	151	142	140	179	4,000	24 Jun. 60	Eastern	34
DC-8-30	JT4A-11	17,500	151	142	157	179	4,500	27 Apr. 60	Pan Am	57
DC-8-40	Conway	17,500	151	142	163	179	4,800	1 Apr. 60	TCA	32
DC-8-50	JT30-3B	18,000	151	142	163	179	4,800	30 Apr. 61	United	141
DC-8-61	JT30-3B	18,000	187	142	164	252	4,500	25 Feb. 67	United	88
DC-8-62	JT30-7	19,000	157	148	175	189	5,500	22 May 67	SAS	68
DC-8-63	JT30-7	19,000	187	148	177	252	5,500	27 Jul. 67	KLM	107

\*Except the Rolls-Royce Conway-powered DC-8-40



# More Douglas Twins

**DOUGLAS DC-9-31 FLEET**

Regn. No.	MSN.	Delivery Date	Remarks and Disposal
N8916E	45733	20 Oct 67	Withdrawn from use and stored at Mohave, California, Jan 91; sold to Aeron Aviation Resources 31 Jan 92
N8917E	45734	27 Mar 67	
N8918E	45833	27 Jan 67	
N8919E	45834	22 Feb 67	
N8920E	45835	29 Mar 67	
			Withdrawn from use, stored at Marana, Arizona, Sep 88; repossessed by First Fidelity Bank Apr 91, and sold to Aeron Av. Resources, 9 Jul 91
N8921E	45836	22 Mar 67	Repossessed by First Fidelity Bank, Apr 91, and sold to Aeron Aviation Resources, 9 Jul 91
N8922E	45837	13 Apr 67	
N8923E	45838	18 Apr 67	
N8924E	45839	30 May 67	
N8925E	45840	28 May 67	
N8926E	45863	21 Jun 67	Withdrawn from use and stored at Mohave, California, Jan 91; sold to Aeron Aviation Resources, 31 Jan 92
N8927E	45864	1 Jul 67	
N8928E	45865	27 Jul 67	
N8929E	45866	29 Jul 67	
N8952E	45867	26 Mar 68	
N8953E	45868	11 Apr 68	Sold to Allegheny Airlines, 5 June 78 (as N930VJ)
N8954E	45869	25 Jun 68	Repossessed by First Fidelity Bank, Apr 91; sold to Aeron Aviation Resources, 9 Jul 91
N8961E	45870	22 Jun 68	Destroyed by fire after hard landing at Fort Lauderdale, Florida, 18 May 72
N8962E	45871	19 Jul 68	Sold to Saviation Sales, Inc. 28 Nov 89; (leased to Midway, (N962ML))
N8963E	45872	26 Jul 68	Sold to Midway Airlines, 28 Nov 89 (N963ML)
N8964E	45873	2 Aug 68	Sold to Aviation Sales, Inc., 28 Nov 89; (leased to Midway (N964ML))
N8965E	45874	1 Aug 68	Sold to Midway Airlines, 2 Jan 90 (N965ML)
N8968E	45875	24 Apr 68	" " " 28 Nov 89 (N967ML)
N8969E	45876	28 Apr 68	" " " " " (N968ML)
N8973E	47036	13 Sep 68	" " " 10 Oct 89 (N972ML)
N8974E	47074	14 Sep 68	Leased, then sold to Eastern, 1 Oct 83; sold to Midway Airlines, 10 Oct 89 (N973ML)
N8988E	47098	15 May 73	Delivered to Caribair 1 Jun 67 (N938PR); managed by Eastern, 15 May 73; withdrawn from use, Jan 91, sold to Aeron Aviation Resources, 31 Jan 92
N8975E	47119	19 Sep 68	Sold to Pegasus Capital Corp. 10 Oct 89
N8990E	47120	15 May 73	Delivered to Caribair, 12 Dec 67 (N939PR); managed by Eastern, 15 May 73; repossessed by Ledbetter & Cia., Jan 91
N8989E	47121	15 May 73	Delivered to Caribair, 23 Mar 68 (N967PR); managed by Eastern, 15 May 73; sold to AVENSA, Venezuela, 23 Aug 91 (YY-82C)
N8930E	47139	4 Oct 67	Sold to Hughes Airwest, 1 Jun 78 (N915RW)

**DOUGLAS DC-9-31 FLEET cont.**

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8931E	47140	7 Dec 67	Repossessed by First Fidelity Bank, Apr 91, and sold to Aeron Aviation Resources, 9 Jul 91
N8932E	47141	23 Dec 67	Sold to Aeronautics Leasing, 26 Jan 88
N8933E	47142	30 Dec 67	" " " 23 Feb 88
N8934E	47143	17 Jan 68	" " " 21 Jun 88
N8935E	47144	15 Jan 68	Sold to Hughes Airwest, 26 Aug 77 (N916RW)
N8936E	47145	30 Jan 68	" " " 20 Jul 77 (N917RW)
N8959E	47157	8 Jun 68	Repossessed by First Fidelity Bank, Apr 91 and sold to Aeron Aviation Resources, 9 Jul 91
N8937E	47158	31 Jan 68	Sold to Hughes Airwest, 14 Oct 77 (N918RW)
N8938E	47161	2 Feb 68	Withdrawn from use, Jan 91, and sold to A.P. Number 1, Inc., 31 Aug 92
N8939E	47162	17 Feb 68	Sold to Hughes Airwest, 15 Sep 77 (N919RW)
N8940E	47163	15 Feb 68	" " " " " (N920RW)
N8941E	47164	19 Feb 68	" " " 17 Jul 77 (N921RW)
N8942E	47165	22 Feb 68	Withdrawn from use, Jan 91, and sold to Airborne Express, 16 Aug 91
N8943E	47166	25 Feb 68	Repossessed by First Fidelity Bank, Apr 91;
N8944E	47167	27 Feb 68	sold to Aeron Aviation Resources, 9 Jul 91
N8945E	47181	29 Feb 68	Withdrawn from use, Jan 91, and sold to Aeron Aviation Resources, 31 Jan 92
N8946E	47182	8 Mar 68	Sold to Hughes Airwest, 19 Oct 78 (N922RW)
N8947E	47183	14 Mar 68	" " " 11 Sep 78 (N923RW)
N8948E	47184	2 Mar 68	Damaged beyond repair, Pensacola, Florida, 28 Dec 87
N8949E	47185	16 Mar 68	Sold to Hughes Airwest, 19 Apr 78 (N924RW)
N8950E	47186	20 Mar 68	Leased to Air Canada, 1 Jun 88 (C-FBKT); returned 14 Aug 89; repossessed by First Fidelity Bank, Apr 91, and sold to Aeron Aviation Resources, 9 Jul 91
N8951E	47187	26 Mar 68	Repossessed by First Fidelity Bank, Apr 91; sold to Aeron Aviation Resources, 9 Jul 91
N8954E	47188	11 Apr 68	Sold to Allegheny Airlines, 2 Aug 78 (N931VJ)
N8955E	47189	4 May 68	" " " 25 Aug 78 (N932VJ)
N8956E	47214	10 May 68	Repossessed by First Fidelity Bank, Apr 91, and sold to Aeron Aviation Resources 9 Jul 91
N8957E	47215	23 May 68	Withdrawn from use, Jan 91, and sold to Aeron Aviation Resources, 31 Jan 92
N8958E	47216	25 May 68	Sold to Allegheny Airlines, 30 Jun 78 (N933VJ)
N8966E	47217	16 Aug 68	Sold to Aviation Sales Corp., 6 Nov 89 (then to Midway Airlines, (N966ML))
N8967E	47267	17 Aug 68	Damaged beyond repair, Akron Ohio 27 Nov 73
N8970E	47268	4 Sep 68	Sold to Chrysler Asset Management Corp., 20 Dec 89
N8971E	47269	6 Sep 68	Sold to Midway Airlines, 10 Oct 89 (N970ML)
N8972E	47270	11 Sep 68	Sold to Aviation Sales, 6 Nov 89 (then to Midway Airlines (N971ML))

**DOUGLAS DC-9-31 FLEET cont.**

Regn	MSN.	Delivery Date	Remarks and Disposal
N8976E	47271	9 Oct 68	Sold to Aviation Sales, 6 Nov 89 (then to Midway Airlines (N975ML))
N8977E	47272	9 Oct 68	Sold to Midway Airlines, Dec 89 (N976ML)
N8978E	47327	15 Oct 68	Withdrawn from use, Jan 91, and sold to
N8979E	47328	17 Oct 68	Aeron Aviation Resources, 31 Jan 92
N8980E	47329	9 Nov 68	Sold to Midway Airlines, 2 Jan 90 (N977ML)
N8981E	47330	9 Nov 68	Withdrawn from use, Jan 91, and sold to
N8982E	47331	15 Nov 68	Aeron Aviation Resources, 31 Jan 92
N8983E	47339	24 Jan 69	Withdrawn from use, Jan 91; repossessed by First Fidelity Bank, Apr 91
N8948E	47400	30 Jan 69	Crashed at Douglas Airport, North Carolina, 11 Sep 74
N8985E	47401	21 Mar 69	Withdrawn from use, Jan 91; repossessed by First Fidelity Bank, Apr 91
N8986E	47402	8 May 69	Withdrawn from use, Jan 91; sold to A.P. Number 1, Inc., 1 Aug 92
N8987E	47403	7 Nov 69	Sold to Airborne Express, 16 Aug 91 (N924AX)

**DOUGLAS DC-9-32 FLEET**

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N543NY	45789	18 Dec 89	New to Swissair, 23 Dec 67 (HB-IFG)
N532TX	45791	15 Feb 90	" " " 28 Jul 68 (HB-IFI)
N531TX	45847	30 Nov 89	" " " 17 Oct 68 (HB-IFM)
N538TX	47218	16 Jan 90	New to Sudflug, Germany, 21 May 68 (D-ACEB), then to Swissair, 20 Oct 68
N533TX	47281	11 Jan 90	New to Swissair, 19 Dec 68 (HB-IFT)
N522TX	47524	6 Dec 89	New to Austrian Airlines, 9 Jul 71 (OE-LDB)

All aircraft sub-leased on dates indicated from Continental Airlines, Previously with Texas International. All returned to Continental on 1 Apr 91 (except N532TX, 28 Jan 91)

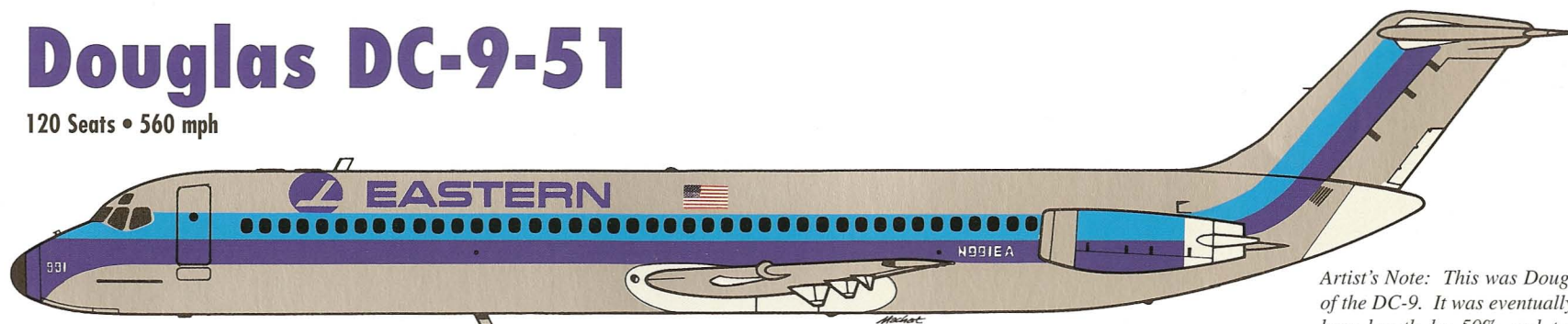
**DOUGLAS DC-9-51 FLEET (LEASED)**

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N675MC	47651	1 Sep 87	New to Austrian Airlines 25 Aug 75 (OE-LDK). Leased from Polaris Income Management Corp. until 91
N676MC	47652	3 Sep 87	New to Austrian Airlines, 12 Dec 75 (OE-LDL). Leased from Polaris until 1 Oct 91
N670MC	47659	3 Sep 87	Originally delivered to Swissair, 12 Feb 76 (HB-ISP). Leased from Polaris until 1 Oct 91
N671MC	47660	1 Sep 87	New to Swissair, 22 Feb 76 (HB-ISR). Leased from Polaris until 1 Oct 91
N677MC	47756	1 Sep 87	New to Austrian Airlines, 31 Jan 78 (OE-LDO) leased from Polaris Income Management Fund, 1 Sep 87, sub-leased to Continental Airlines, 1 Mar 91, to Polaris Leasing, 1 Oct 91



# Douglas DC-9-51

120 Seats • 560 mph



Artist's Note: This was Douglas's third "stretch" of the DC-9. It was eventually to increase in fuselage length by 50% and to double its seating capacity (see table of data on this page)



Size comparison with the Boeing 747 (p.85)



Engines	Pratt & Whitney JT8D-17 (16,000 lb. thrust) x 2
MGTOW	121,000 lb
Max. Range	1,600 miles
Length	133 feet
Span	89 feet

## DOUGLAS DC-9-51 FLEET cont.

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N404EA	47665	1 May 78	New to Allegheny Airlines 16 Dec 75 (N923VJ). Sold to Eastern. Sold to AVENSA (Venezuela) 2 Aug 91 (YV-90C)
N418EA	47676	17 Oct 80	New to Hawaiian Airlines, 10 Sep 75 (N609HA), and sold to Eastern. Sold to and leased from Bankers Trust Corp. 23 Nov 87-10 Aug 88. Sold to and leased from Douglas Finance Corp. until 18 Mar 91
N419EA	47677	29 Aug 80	New to Hawaiian Airlines, 7 Oct 75 (N519HA) and sold to Eastern. Sold to and leased from U.S. Airleases, 5 Oct 88-18 Mar 91
N421EA	47679	19 Sep 81	New to Hawaiian Airlines, 20 Nov 75 (N629HA) and sold to Eastern. Sold to, leased from Aviation Transactions 30 Sep 86-18 Mar 91
N401EA	47682	16 Nov 78	New to Allegheny Airlines, 10 Oct 75 (N920VJ) and sold to Eastern. Withdrawn from use, Jan 91 and sold to Northwest Airlines, 24 Mar 94
N402EA	47683	28 Oct 78	New to Allegheny Airlines, 13 Nov 75 (N921VJ) and sold to Eastern. Sold to AVENSA, Venezuela, 15 Jul 91 (YV-85C)
N403EA	47685	1 Jun 78	New to Allegheny Airlines, 21 Nov 75 (N922VJ) and sold to Eastern. Sold to AVENSA 15 Jul 91 (YV-87C)
N406EA	47686	1 Aug 78	New to Allegheny Airlines, 27 Feb 76 (N925VJ) and sold to Eastern.
N405EA	47688	6 Jul 78	New to Allegheny Airlines, 27 Feb 76 (N924VJ) and sold to Eastern.
N420EA	47689	12 Sep 81	New to Hawaiian Airlines, 19 Dec 75 (N639HA) and sold to Eastern. Sold to GATX Leasing, 24 Sep 91.

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N407EA	47692	1 Sep 78	New to Allegheny Airlines, 12 Mar 76 (N926VJ) and sold to Eastern. Sold to, then leased from Manufacturers Hanover Leasing, Feb 85; sold to Citicorp North America, Inc., 5 May 89
N408EA	47693	2 Oct 78	New to Allegheny Airlines, 27 Feb 76 (N927VJ) and sold to Eastern: sold to, then leased from Connecticut National Bank, Feb 81
N409EA	47728	13 Jul 77	First reg. as N991EA, re-reg. 5 Sep 78
N410EA	47731	16 Aug 77	" " " N992EA, " Aug 78
N411EA	47732	31 Aug 77	" " " N993EA, " Sep 78
N412EA	47733	22 Sep 77	" " " N994EA, " 13 Sep 78
N413EA	47745	5 Oct 77	First reg. as N995EA, re-reg. 18 Mar 91

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N414EA	47746	21 Oct 77	" " " N996EA " Oct 78
N415EA	47749	3 Nov 77	" " " N997EA " 15 Sep 78
N416EA	47751	14 Nov 77	" " " N998EA " Nov 78
N417EA	47753	21 Nov 77	" " " N999EA " Nov 78

N406EA, N405EA, and N408EA thru N417EA, were returned to the Douglas Finance Corporation on 18 March 1991

## THE DC-9 FAMILY

Series	Dimensions (ft)			Typical Seating	Engines (2)		MGTOW (lb.)	First Service		No. Built
	Length	Span	Height		Type	Thrust (lb.)		Date	Airline	
DC-9-10	104	89	27	80	JT8D-1	14,000	90,700	8 Dec. 65	Delta	137
DC-9-20	104	93	27	80	JT8D-9	15,000	87,000	23 Jan. 69	SAS	10
DC-9-30	119	93	27	97	JT8D-7	14,500	108,000	1 Feb. 67	Eastern	662
DC-9-40	125	89	28	107	JT8D-9	14,500	114,000	12 Mar. 68	SAS	71
DC-9-50	133	89	28	114	JT8D-17	16,000	121,000	24 Aug. 75	Swissair	96
DC-9-80 <sup>1</sup>	148	108	30	142	JT8D-209	18,500	140,000	5 Oct. 80	Swissair	1,119
DC-9-87 <sup>2</sup>	130	108	30	109	JT8D-217	20,000	140,000	14 Nov. 87	Swissair	76
MD-90	152	108	30	141-172	IAE V2525	25,000	156,000-168,000	1 Apr. 95	Delta	116
Boeing 717 <sup>3</sup>	124	93	28	117	BMW/R-R 715	21,000	121,000	12 Oct. 99	Air Tran	100 <sup>4</sup>

Notes: 1. Includes DC-9-81/82/83/88. 2. Became MD-87. 3. Originally MD-95 4. Production Continues



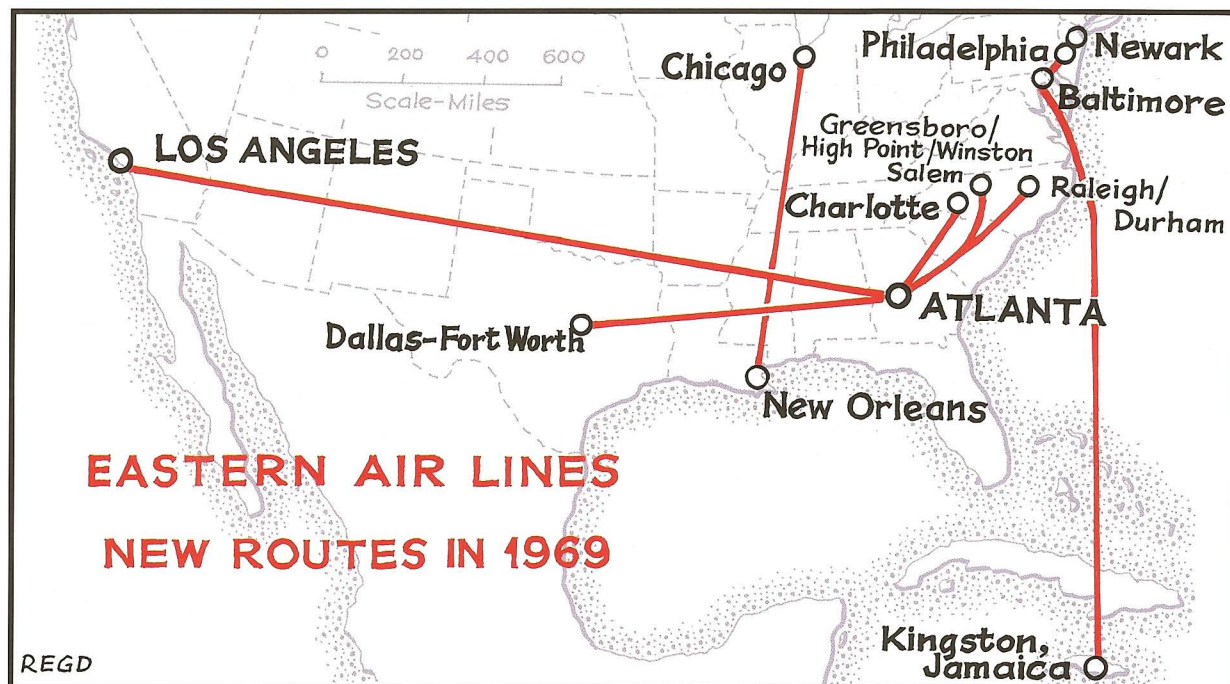
# Route Expansion (and Denial)

Eastern Air Lines had begun to stretch its aerial legs in the summer of 1967, when it opened service to Seattle, on the west coast (page 74). It already had its eyes on more distant horizons, and in 1966, was one of 18 candidates for a favorable nod from the Civil Aeronautics Board, with a blessing from the State Department and the President in the **Re-opened Transpacific Case**. Evidence was heard during 1967, and after exhaustive depositions by the airline lawyers, supported by tons of paperwork, the C.A.B. recommended Eastern for the coveted trans-ocean route in April 1968.

Much was at stake, and the entire issue was highly political. The major airlines were identified with one or other of the two great political parties. In the late 1960s, the Administration was Democrat, under Lyndon Johnson, and on 19 December 1968, he overlooked Eastern's powerful claim (as it offered direct service from the east coast to the Pacific) and gave the route to Continental Airlines. But Johnson's term ended on 20 January 1969, and President Nixon had hardly set foot in the White House before he postponed all the Pacific route awards on 24 January. Eastern's Republican leanings suggested that it was now the front-runner, but on 21 July 1969, neither Continental nor Eastern won out. American Airlines was the eventual winner.

Nearer home, Eastern did much better. On 23 September 1969 it opened nonstop service from Atlanta to **Los Angeles**, with various thru plane connections to Florida and the northeast, as well as more connections to Dallas. This was some compensation for losing, for example, a route to Australia, as the population of the Californian metropolis was almost as large as the whole of Australia, and would thus generate as much traffic. In fact, Eastern's traffic as a whole was booming, and its route system was more concentrated on longer routes to big cities than to the previously favored small communities. It had thus put the "stretched" **Douglas DC-8-61s** in to service in February 1969, and these were ideal for routes such as the Los Angeles transcontinental, and also for Chicago-New Orleans and Newark-Philadelphia-Baltimore-Kingston (Jamaica), started on 26 October and 13 December 1969, respectively.

The DC-8-61 could carry, depending on the mix of cabin classes, up to 250 passengers or more, although Eastern's



usually averaged about 220. In February 1969, in addition to its fleet of 17 Dash-61s, six DC-8-63s were added, starting in February 1969. These fine aircraft could also fly routes of 5,000 miles, with full passenger load—adequate, for example, for Los Angeles-Sydney or San Francisco-Tokyo. But with the loss of the anticipated trans-Pacific routes, the aircraft were not needed and were disposed of within a few years of service.

## Boeing 747

When, in the wee small hours of 22 January 1970, Pan American Airways put the Boeing 747 into service, it did more than serve as the launch customer of (and indeed the inspiration for) a new airliner. It launched a complete new generation of what soon became known as the "jumbo jets." Such was the impact on the leading airlines of the world, that everyone had to have them, as the on-board comfort level and

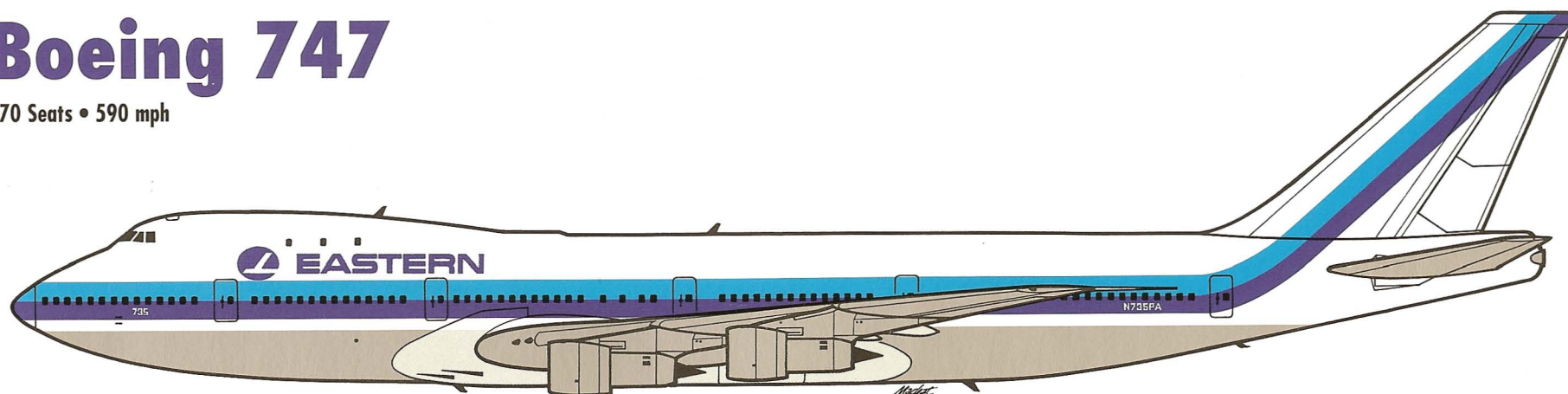
the amenities, such as the upper deck luxury, were demonstrably superior to those of the previous generation of Boeing 707s and Douglas DC-8s. Even with six abreast seating, these latter became known as "narrow-bodied" jets, against the giant "wide-bodied" 747s.

Eastern's need for a 360-seat mixed-class aircraft was mainly for the dense traffic from New York and the northeast to Florida and to San Juan; but it did not need such capacity at the same high level as the transcontinental and trans-ocean airlines. It began service on the New York Miami route on 21 December 1970, and fell back on its old device of leasing aircraft, in this case from Trans World Airlines. Its fleet was limited to three aircraft, as the other manufacturers, Lockheed and Douglas, were producing wide-bodied tri-jets that were more suited to Eastern's capacity requirements. In mixed class, for example, a Douglas DC-10 or Lockheed L-1011 had 270 seats—just about right.



# Boeing 747

370 Seats • 590 mph



## BOEING 747-121 FLEET

Reg'N	MSN	Delivery Date	Remarks and Disposal
N731PA	19637	3 Jan 71	Leased from Pan American Airways until 29 Apr 71; and 1 Nov 71–26 Apr 72
N735PA	19642	26 Nov 70	Leased from Pan American Airways until 30 Apr 72
N737PA	19644	1 Jan 71	Leased from Pan American Airways until 5 May 72
N7401Q	20080	22 Oct 70	Sold to TWA on delivery date (N93113)
N7042Q	20081	2 Nov 70	Sold to TWA on delivery date (N93114)
N7043Q	20082		Built for Eastern, but never delivered. Delivered to TWA, 2 Sep 71 (N93118)
N7404Q	20083		Built for Eastern, but never delivered. Delivered to TWA, 27 Oct 71 (N93119) (This aircraft was the notorious Flight 800 which crashed shortly after take-off from New York's JFK Airport on 17 Jul 96)

*Artist's Note: This was Eastern's largest airliner, which all the modern airliners in this book are compared to for size*

Two Boeing 747-200s were ordered from QANTAS in 1980 for the Miami-London route, but the order was cancelled when the British Government designated Gatwick Airport instead of Heathrow. These were VH-EBC (20012/171) and VH-EBD. They were U.S. registered as N732EA and N731EA, respectively. The latter aircraft was painted in Eastern's colors, but neither one left Australia.

<b>Engines</b>	Pratt & Whitney JT9D (43,500 lb. thrust) x 4
<b>MGTOW</b>	355 tons
<b>Max. Range</b>	5,500 miles
<b>Length</b>	231 feet
<b>Span</b>	196 feet

# BOEING



*Leased from Pan American Airways, this Boeing 747 did not wear the "hockey stick"—but the blue line was close enough (courtesy Rober Bentley)*



# Whisperliner

As Eastern was not a prime customer for the Boeing 747, because it did not need trans-Atlantic range, it had a choice of the other wide-bodied jets, the G.E.-powered Douglas DC-10, the Rolls-Royce-powered **Lockheed L-1011 TriStar**. These were tri-jets and, even at that early stage, it took a look at the European twin-engined Airbus, which, however, at that time, did not have the necessary range for all of Eastern's best medium range routes. It selected the TriStar, but spent some anxious months when the famous engine firm almost went under, saved from bankruptcy only by a massive intervention by the British Government.

The order for 50 TriStars was re-affirmed late in April 1971, and Eastern was able to inaugurate its Whisperliner service, with plush interiors and a first-class lounge, from Miami to New York, via Atlanta, on 26 April 1972. Eastern was the launch customer for this airliner. In August 1972, reflecting the trend of passenger preference, the lounges were removed, to offer more seating capacity, and to take advantage of a more tolerant attitude of the Civil Aeronautics Board towards lower fares. With the influx of this new fleet, the airline sought to sell its DC-8 fleet (the last Constellation had been retired on 14 February 1968) to reduce the number of types to the Electra, the TriStar, the Boeing 727, and the DC-9.

## LOCKHEED L-1011-1

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N301EA	1002	24 Mar 73	Sold to International Air Leases, March 89
N302EA	1003	22 May 73	Sold to Delta Air Lines, 27 Mar 91 (N781DL)
N303EA	1004	15 Dec 72	Sold to International Air Leases, 28 Apr 89
N304EA	1005	11 Jul 72	Sold to Aviation Sales Co., 16 Jan 84
N305EA	1006	23 Nov 72	Sold to Delta Air Lines, 30 Dec 91
N306EA	1007	5 May 72	Sold to Aviation Sales Co., 30 Jan 84
N307EA	1008	22 May 72	Sold to LTU, Germany, 8 Nov 75 (D-AERO), subsequently sold back to Lockheed 18 Apr 77, (N22679), sold again to LTU, 28 Feb 79; sold to Eastern, 18 Dec 80 and leased back until 17 Mar 81; reregistered N371EA; sold to Aviation Sales, Jan 84
N308EA	1009	25 Jul 72	Sold to Delta Air Lines, 27 Aug 91 (N783DL)
N309EA	1010	25 Jul 72	Leased to TWA, 30 Apr-28 Oct 73, and 30 Apr-30 Oct 74; sold to First Chicago Leasing Corp, 31 Oct 88
N310EA	1011	18 Aug 72	Crashed into Florida Everglades 29 Dec 72
N311EA	1012	2 Nov 72	Sold to Aviation Sales, Inc., Mar 84
N31011	1013	24 Nov 73	Leased from TWA, returned 29 Apr 74
N11002	1014	12 Nov 73	Leased from TWA, returned 21 May 74
N312EA	1019	14 Dec 72	Leased from Haas-Turner; sub-leased to Air Canada, May-Oct, each year 1973-1980, and finally 5 Apr 81-6 May 88 (C-FTNA); returned to Haas-Turner, 6 May 88



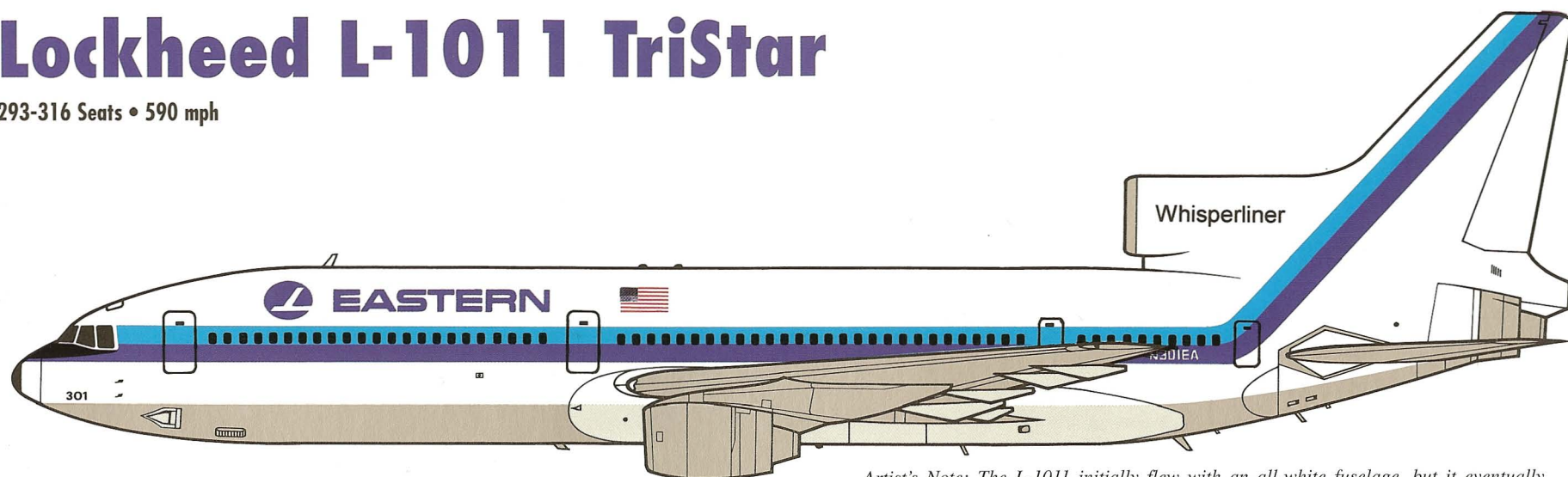
*Eastern's Lockheed L-1011 Whisperliner, white-topped, with "hockey-stick" insignia, still carrying the fleet number matching the registration's.*

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N313EA	1020	15 Dec 72	Sold to and leased back from Intl. Air Leases, 18 Jan 89; returned to Intl. Air Leases 26 Jun 91
N314EA	1022	2 Jan 73	Leased to Cathay Pacific Airways, 6 Oct 79-Oct 83; sold to James Co. Leasing, Oct 83
N315EA	1023	1 Jul 73	Leased from Haas-Turner; sub-leased to Air Canada each year, summer months, finally 18 May 81 (C-FTNC); sub-leased to Air Transat 12 Nov 87 and sold to ATC Matrix and Matrix Funding Corp. 30 Mar 88
N372EA	1033	18 Dec 80	Purchased from and leased back to LTU, Germany, 18 Dec 80; returned 1 Apr 81; leased to Air America, 15 Jun-7 Dec 88; leased to Air Algérie on sub-lease from American Trans Air, 30 May 89-6 Nov 89; sold to and leased back from Cathay Pacific 14 Mar 90; returned to Cathay, 8 May 90 (VR-HNV)
N316EA	1037	30 Jun 73	Leased to Cathay Pacific, 1 Mar 80; sold to James Co. Leasing, Oct 83
N317EA	1038	13 Jul 73	Leased to American Trans Air 18 Jun-26 Sep 90, sold to Delta Air Lines, 15 May 91 (N784DA)
N318EA	1039	13 Aug 73	Sold to Cathay Pacific Airways, 18 Feb 89
N319EA	1040	13 Aug 73	Sold to and leased back from Electra Aviation, Ltd., 13 Nov 89; returned to Electra, 8 Mar 91
N320EA	1042	1 Sep 73	Sold to Cathay Pacific Airways, 20 Apr 87
N321EA	1043	20 Sep 73	Leased, 18 Oct 78, then sold to Cathay Pacific Airways, 20 Apr 87 (VR-HOD)
N322EA	1044	12 Oct 73	Sold to Cathay Pacific Airways, 9 Apr 89 (VR-HOJ)
N323EA	1045	16 Oct 73	Leased to BOAC, 6 Oct 78-29 Feb 80; leased to LTU, 3 Jun-29 Nov 88; sold to Cathay Pacific, 29 Nov 88 (VR-HOG)
N324EA	1050	13 Nov 73	Sold to Cathay Pacific, 13 Aug 88 (VR-HOH)
N325EA	1051	22 Nov 73	Leased to TWA, 17 May-28 Oct 75; sold to Cathay Pacific Airways, 18 Jul 78 (VR-HHY)
N326EA	1054	12 Dec 73	Leased to TWA, 2 May-16 Oct 74; leased, 14 Sep 76, then sold to Cathay Pacific, 11 May 77 (VR-HHX)
N327EA	1055	18 Dec 73	Sold to and leased back from Wilmington Trust Co. 10 Jan 85; returned to Wilmington Trust, Sep 88
N328EA	1056	20 Dec 73	Sold to Cathay Pacific Airways, 1 Dec 76 (VR-HHG)
N41020	1072	13 Nov 74	Leased from TWA, returned 28 Apr 75
N329EA	1085	17 Oct 74	Reposessed by Westinghouse Credit Corp., 18 Mar 81
N330EA	1087	30 Jun 75	Reposessed by Mellon Financial Services, 2 Jan 91
N331EA	1121	6 Dec 75	Leased to Worldways Airlines, 23 Jun-18 Oct 89; sold to Delta Air Lines 21 Jan 92 (N785DL)
N332EA	1123	21 Nov 75	Sold to Delta Air Lines, 5 Dec 91 (N786DL)
N333EA	1126	26 Mar 76	Sold to Delta Air Lines, 11 Oct 91 (N787DL)
N334EA	1141	11 Nov 76	Leased to Air Algérie on sub-lease from American Trans Air 19 May-15 Nov 83; sold to Delta Air Lines, 25 Jul 91 (N788DL)
N335EA	1142	20 May 77	Sold to Delta Air Lines, 19 Jun 91 (N789DL)
N336EA	1143	29 May 77	Leased to Worldway Airlines, 7 Jun-30 Oct 90; sold to Delta, 18 Sep 91 (N790DL)
N337EA	1152	27 Jul 78	Sold to LTU (D-AERP) and leased back, 22 Dec 81-22 Apr 82
N338EA	1153	13 Sep 78	Sold to LTU (D-AERM) and leased back, 18 Dec 80-4 Jan 81
N339EA	1158	9 Nov 78	Sold to LTU (D-AERN) and leased back, 18 Dec 80-6 Feb 81



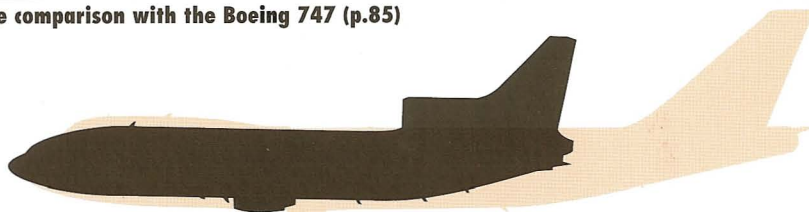
# Lockheed L-1011 TriStar

293-316 Seats • 590 mph



*Artist's Note: The L-1011 initially flew with an all-white fuselage, but it eventually appeared in bare metal, with the blue "hockey-stripe" colors*

Size comparison with the Boeing 747 (p.85)



## Engines

**Rolls-Royce RB211**  
(42,500 lb.) x 3

## MGTO

**215 tons**

## Max. Range

**3,500 miles**

## Length

**177 feet**

## Span

**155 feet**



*This L-1011, landing at Baltimore, shows an all-metal paint scheme, with flags; but the "whisper" of the Whisperliner had to be heard, even if not portrayed. (Photo courtesy Roger Bentley)*

First of the new wide-bodied tri-jets to go into service was the Douglas DC 10, with American Airlines, on 5 August 1971. Lockheed's L-1011, however, ran into serious trouble; for although the Rolls-Royce RB.211 engines were of advanced design (with three-spool types, against Douglas's General Electric CF-6's two), and the metallurgy was more advanced, the illustrious British engine manufacturer went bankrupt on 4 February 1971. The British Government took over the company, to keep it alive, and after a bitter controversy, involving banks, airlines, governments, and industry, the U.S. Senate agreed, by a margin of one vote, to approve the Emergency Loan Guarantee Act, on 2 August 1971.

During this period, there was growing public concern in the residential areas near major airports about the noise of jet airliners. Eastern pleaded its case by emphasizing the comparatively low noise level of its Rolls-Royce-powered Lockheed TriStars.



# More Boeing 727s

Together with the fleet of Douglas DC-9s (see pages 78-79, 82-83) the Boeing 727 series was the ultimate "DC-3 Replacement."

## EASTERN BOEING 727s

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
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### Boeing 727-214

N530EA	19685	1 Dec 85	Leased from Pacific South West Airlines (PSA) 22 Sep 80, then purchased; sold to Trump Shuttle, 6 Jun 89 (N908TS)
N531EA	19686	27 Nov 85	Leased from PSA, 7 Oct 80, then purchased; sold to Trump Shuttle, 7 Jun 89 (N909TS)
N532EA	19687	1 Dec 85	Leased from PSA, 16 Oct 80, then purchased; sold to Trump Shuttle, 7 Jun 89 (N910TS)
N534EA	19689	1 Dec 85	Leased from PSA, 7 Oct 80, then purchased; sold to Trump Shuttle, 7 Jun 89 (N911TS)

### Boeing 727-224

N66731	20660	16 May 95	Purchased from Nations Bank of Tennessee (Ex-Continental Airlines), and sold on same day to Lift Management, Inc.
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### Boeing 727-227

N431BN	20838	17 Jul 95	Purchased from IAL Aircraft Holding, Inc. (originally delivered to Braniff and flown by several airlines); sold on same day to Amerijet Intl., Inc. (N196AJ)
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### Boeing 727-254

N547EA	20250	30 Jun 81	Purchased from PSA, sold to Trump Shuttle, 7 Jun 89 (N913TS)
N548EA	20251	30 Jun 81	Purchased from PSA, sold to Trump Shuttle, 7 Jun 89 (N914TS)
N549EA	20252	Sep 81	Purchased from PSA, sold to Trump Shuttle, 7 Jun 89 (N915TS)
N584EA	20437	Aug 81	Purchased from PSA, sold to Trump Shuttle, 7 Jun 89 (N916TS)
N536EA	20438	Nov 85	Leased from PSA, 16 Oct 81, then purchased; sold to Trump Shuttle, 7 Jun 89 (N912TS)

### Boeing 727-225

Notes: AAR = Sale to Aeron Aviation Resources, 17 Dec 91; Pan American leases ended 5 Dec 91

N8825E	20144	22 Aug 69	Sold to ONA Leasing, Inc., and leased back, 8 May 81; purchased Aug 84; leased to Pan American 5 Jun 89; AAR (As N8825E, except lease to Pan Am 9 Jun 89) AAR
N8826E	20145	28 Aug 69	(As N8825E, except purchase Sep 84, Pan Am 6 Jun 89) AAR
N8827E	20146	10 Sep 69	(As N8825E, except purchase Dec 84, Pan Am 15 Jun 89)
N8828E	20147	31 Oct 69	and repossessed by First Fidelity Bank, Dec 91
N8829E	20148	7 Nov 69	(As N8825E, except purchase Dec 84; no Pan Am lease) repossessed by AAR, 15 May 91

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8830E	20149	12 Nov 69	(As N8229E, except purchase 26 Nov 84); sold to Trump Shuttle, 7 Jun 89 (N917TS)
N8831E	20150	14 Nov 69	(As N8830E); sold to EXTEX Intl. Inc., 19 Jun 91
N8832E	20151	21 Nov 69	(As N8830E); sold to EXTEX 8 Jan 92
N8833E	20152	26 Nov 69	(As 8830E); sold to Intl. Airline Support Group, 31 Aug 92
N8834E	20153	12 Dec 69	(As 8829E); sold to Intl. Air Leases, Inc., 2 Apr 72
N8835E	20154	16 Dec 69	(As 8829E); sold to EXTEX Intl. Inc., 19 Jun 91
N8836E	20379	17 Jun 70	Leased to Pan Am 15 Jun 89; AAR
N8837E	20380	30 Jun 70	(As 8836E, except lease to Pan Am 9 Jun 89)
N8838E	20381	14 Jul 70	Leased to Club-Air, 1 May 88-20 Oct 88 (EI-BVO); leased to Pan Am, 9 Jun 89; AAR
N8839E	20382	22 Jul 70	Leased to Pan Am, 1 Jun 89; AAR
N8840E	20383	20 Aug 70	Leased to Pan Am, 15 Jun 89; AAR
N8841E	20415	31 Aug 70	Leased to Pan Am, 1 Jun 89; AAR
N8842E	20416	1 Sep 70	Leased to Pan Am, 9 Jun 89; AAR
N8843E	20441	4 Sep 70	Leased to Pan, 15 Jun 89; AAR
N8844E	20442	28 Sep 70	Leased to Pan Am, 15 Jun 89; AAR
N8845E	20443	10 Nov 70	Crashed at JFK, New York, 24 Jun 75 (suspected windshear problem)
N8846E	20444	16 Nov 70	Repossessed by AAR, 11 Apr 91
N8847E	20445	16 Nov 70	Sold to Trump Shuttle, 7 Jun 89 (N918TS)
N8848E	20446	11 Nov 70	Leased to Pan Am, 9 Jun 89; AAR
N8849E	20447	17 Nov 70	Sold to Trump Shuttle, 7 Jun 89 (N919TS)
N8850E	20448	23 Nov 70	Sold to Trump Shuttle, 7 Jun 89 (N920TS)
N8851E	20614	26 Sep 72	Sold to AAR, 15 Aug 89
N8852E	20615	28 Sep 72	Sold to AAR, 15 Jul 91
N8853E	20616	6 Oct 72	Sold to AAR, 15 Aug 89
N8855E	20617	11 Oct 72	Repossessed by First Fidelity Bank, 3 Apr 91
N8856E	20618	16 Oct 72	" " " " " 16 Apr 91
N8857E	20619	19 Oct 72	Sold to AAR, 8 July 91
N8858E	20620	24 Oct 72	Repossessed by First Fidelity Bank, 18 Apr 91
N8859E	20621	3 Nov 72	" " " " " 4 Apr 91
N8860E	20622	6 Apr 73	Sold to United Aviation Services, 18 Sep 89
N8861E	20623	1 May 73	Leased Avianca, 24 Aug 88-Feb 89; sold to Pacific Interstate Airlines, 1 Jun 89
N8862E	20624	4 May 73	Sold to United Aviation Services, 14 Sep 89
N8863E	20625	8 May 73	" " " " " 18 Sep 89
N8864E	20626	30 May 73	" " " " " Nov 89
N8865E	20627	5 Jun 73	" " " " " 28 Sep 89
N8866E	20628	6 Jun 73	Leased to Avianca, 15 Sep 88-Apr 89; sold to Pacific Interstate Airlines, 1 Jun 89
N8867E	20823	6 Dec 73	Sold to, then leased back from Sanwa Credit Corp., Jan 85; repossessed by Sanwa 9 Apr 91
N8869E	20824	7 Dec 73	(As N8867E, except repossessed, 10 Apr 91)
N8870Z	21288	23 Nov 76	Repossessed by Boeing Equipment Holding Corporation, 15 Mar 91
N8871Z	21289	3 Dec 76	As above, 8 Mar 91
N8872Z	21290	16 Dec 76	As above, 22 Feb 91

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N8873Z	21291	30 Dec 76	As above, 22 Feb 91
N8874Z	21292	21 Dec 76	Leased to Avianca, 22 Jun 89-12 Jun 90; then as N8870Z, 28 Feb 91
N8875Z	21293	23 Dec 76	Leased to Avianca, 22 Jun 89-24 Oct 90; then as N8870Z, 15 Feb 91
N8876Z	21249	18 Nov 77	Leased to Bahamas Air, Nov 89-Jun 90; repossessed by General Motors Aircraft credit, 21 May 91
N8877Z	21450	7 Dec 77	Sold to and leased back from General Electric Credit Corp., Jan 81; repossessed by G.E.C.C. 18 Mar 91
N8878Z	21451	20 Jan 78	(As N8877Z)
N8879Z	21452	21 Jan 78	Leased to Bahamas Air, Nov 89-21 Feb 91; repossessed by Chase Manhattan Bank, 18 Mar 91
N8880Z	21453	2 Feb 78	Sold to United Aviation Services, 7 Aug 89
N8881Z	21578	10 Nov 78	" " " " " 15 Sep 89
N8882Z	21579	17 Nov 78	" " " " " 2 Aug 89
N8883Z	21580	25 Jan 79	" " " " " 6 Sep 89
N8884Z	21581	31 Jan 79	" " " " " 2 Aug 89
N8885Z	21854	17 Oct 79	Leased to Orion Air, Jul 88-Nov 88; repossessed by Connecticut Bank & Trust, 18 Mar 91
N8886Z	21855	23 Oct 79	Repossessed by Connecticut B&T, 18 Mar 91
N8887Z	21856	1 Nov 79	" " by Westinghouse Credit Corp. 18 Mar 91
N8888Z	21857	5 Nov 79	(As N8886Z)
N8889Z	21858	4 Dec 79	Repossessed by United States Leasing Corp., 18 Mar 91
N8890Z	21859	30 Nov 79	(As N8889Z, 31 May 91)
N8891Z	21860	27 Nov 79	(As N8889Z, 23 May 91)
N8892Z	21861	12 Jul 79	(As N8887Z)
N801EA	22432	6 Oct 80	Repossessed by General Electric Capital Corp., 18 Mar 91
N802EA	22433	8 Oct 80	(As N801EA)
N803EA	22434	30 Nov 80	Repossessed by Xerox Credit Corp., 15 May 91
N804EA	22435	7 Nov 80	" " " " " 8 May 91
N805EA	22436	12 Nov 80	" " by Capital CIT Group/Equipment Leasing, 20 Mar 91
N806EA	22437	17 Nov 80	Repossessed by Xerox Credit Corp., 22 May 91
N807EA	22438	21 Nov 80	(As N8887Z)
N808EA	22439	2 Dec 80	Repossessed by Exchange National Bank of Chicago, 18 Mar 91
N809EA	22440	8 Dec 80	Repossessed by Intl. Air Leases Inc., 1 Mar 91
N810EA	22441	15 Dec 80	" " " " " 20 Feb 91
N811EA	22548	9 Apr 91	" " by Xerox Credit Corp., 25 Apr 91
N812EA	22549	22 Apr 81	" " " " " 8 May 91
N813EA	22550	27 Apr 81	" " " " " 5 Jun 91
N814EA	22551	7 May 81	" " " " " 15 May 91
N815EA	22552	2 Oct 81	(see N801EA)
N816EA	22553	2 Oct 81	(see N801EA)
N817EA	22554	2 Nov 81	(see N801EA)
N818EA	22555	1 Dec 81	(see N801EA)
N819EA	22556	7 Apr 82	Crashed into Mt Illimani, Bolivia, 1 Jan 85
N820EA	22557	7 Apr 82	(see N801EA)
N821EA	22558	3 May 82	(see N8886Z)
N822EA	22559	3 May 82	(see N8886Z)

Note: MSNs 22560-22563 (N823EA, N824EA, N8893Z, N8894Z) orders Cancelled, and aircraft not built.



# DC-8 Color Variants

From the inaugural flights in January 1960 to the beginnings of the famed “hockey stick” markings of 1965, Eastern’s DC-8s wore no less than nine different color schemes. To be accurate, the first scheme depicted in company advertising was never flown, as the legalities of Eastern’s calling its airplane the DC-8B were challenged by other DC-8 operators.

**Pre-Delivery Scheme (1959)** This was an embellishment of the original multi-color design conceived by the brilliant industrial designer, Raymond Loewy. Highly ornate and extremely complex, the five-color motif was applied to the aircraft, using metallic gold paint where needed. Visually delightful, Loewy’s color scheme was considered to be one of the most elegant and regal ever applied to a commercial airliner, but it was a maintenance nightmare.

A white-crown fuselage top with a multi-striped indigo-blue arrowhead “cheat-stripe” stretched from the aircraft’s nose to its tail. Red, white, blue, and gold pin-stripes adorned the outer edges of the arrowhead, with the tri-color design repeated at the top of the vertical stabilizer for visual continuity. A flat black nose cap covered the tip half of the radome and anti-glare panel ahead of the cockpit windows, while red letters with razor thin blue pin-stripes spelled out **FLY EASTERN’S GOLDEN FALCON JET DC-8B** above the window line, led by an American flag on the forward fuselage.

An equally complex swept-winged red, white, and gold falcon “flew” on the aircraft’s white vertical stabilizer, and matching tapered red, white, and blue striping was painted along the centerlines of each engine nacelle, echoing the design of Eastern’s piston-powered airliners from the previous decade. Gold-painted Golden Falcon logos were placed prominently aft of each passenger door, echoing the style when passengers climbed boarding stairs to enter the aircraft.

**Delivery Scheme (1960)** As described above, but with tapered stripes deleted from the nacelles, leaving the DC-8s of Delta, Panagra, and Trans Canada as the only new Douglas jetliners to wear line-of-flight engine striping.

**Delivery Scheme No. 2** Same as above, but with “DC-8B” deleted from title and replaced with an American flag aft of the lettering. This was the first scheme flown in airline service. (*Mike Machat’s drawing—in colored pencil!—top picture*)



**Delivery Scheme No. 3** As above, but with the radome painted light gray instead of black, and a small triangular-shaped anti-glare panel with red-and white pin-stripes ahead of the windshield.

**Delivery Scheme No. 4** As above, with title shortened to **FLY EASTERN AIR LINES**.

**Delivery Scheme No. 5** As above, with an all-white vertical stabilizer and a differently-shaped solid red Falcon on the tail (*lower picture*).

**Blue Spear Scheme (1962)** Adapted from Eastern’s Boeing 720 design, the complex Loewy markings were replaced by a royal blue cheat stripe, with red and gold surround below the window line. Tail markings returned to exactly the same-shaped red and gold falcon on the tail, with

lighter royal blue cap at the top of the vertical fin. The titles were still **FLY EASTERN AIR LINES**.

**Blue Spear Scheme No. 2** As above, with Golden Falcon logo and lettering eliminated from aft of forward passenger door. Titles shortened simply to **FLY EASTERN**.

**Hockey Stick “Whisperjet” Scheme 1965** This modernized image was a clean twin-stripe design on an almost-white fuselage. Only the extreme lower surfaces of the fuselage were bare metal. Stripes curved up from the fuselage to follow the sweep angle of the tail fin as well. The clean **EASTERN** lettering style appeared, with the stylized bird on an oval field logo. First used on Eastern’s Boeing 727-100, this was the first simplified ultra-modern paint scheme used by any major U.S. airline..





# Caribbean Expansion

By the late 1960s, North American tourists were seeking more variety in their winter season destination choices; and although Florida was still the favorite, many were more adventurous and sought the new resorts in the many Caribbean islands. These were served by a variety of airlines of different nationalities—many islands were colonies or territories of European origin—and one, Puerto Rico, was an overseas territory of the United States. It had its own airline, **Caribbean-Atlantic Airlines (Caribair)**, which was, by 1970, however, in financial trouble. This seemed to offer an opportunity for Eastern to move in.

Caribair had been founded by Dionisio Trigo on 27 February 1939, and on 1 June, he took over Powelson Air Services, which had started flights from San Juan to Ponce in the previous year. Using ten-seat Stinson aircraft, it also flew to the U.S. Virgin Islands, and a C.A.B. Certificate was granted on 23 July 1942. At the end of the Second World War, Trigo leased some Lockheed Lodestars, then acquired three DC-3s, and expanded to Santo Domingo on 27 December 1948. Further expansion followed (see map) and the fleet was improved, first by Convair 340s, fitted with JATO (Jet Assisted Take Off) rockets, to ensure safe clearance of a small mountain crest right in line with the runway at St. Thomas. Rolls-Royce Dart-engined Convair 640s followed, and finally, in December 1967, Douglas DC-9 jets.

By 1968, Caribair was receiving healthy competition from another local airline, Prinair, whose de Havilland 19-seat Herons were readily adaptable to the traffic demands and patterns of the area. Caribair also lost its case for a non-stop route to Miami, so Trigo was doubly handicapped. The little airline, one of the most colourful of all the U.S. Territorials, was ready for a take over bid.

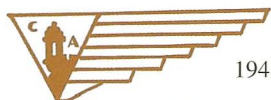
This offer, from Eastern, was made public on 27 October 1970, and eventually, after innumerable (and not unwarranted) objections from Prinair, and repeated extensions (during which time Eastern had kept Caribair afloat with loans) the merger was finally settled on 15 March 1973. Eastern could now serve the entire chain of delectable Caribbean Islands, hitherto served mainly by Pan American Airways.

*After, first, an orthodox insignia of the postwar period, then some with a local San Juan flavor, Caribair adopted an aggressive marketing posture, with the slogan "Now we're a lot more airline."*



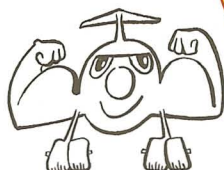
*A Caribair JATO-Convair takes off from Isla Verde International Airport at San Juan, Puerto Rico. (courtesy: Jon Proctor)*

1945

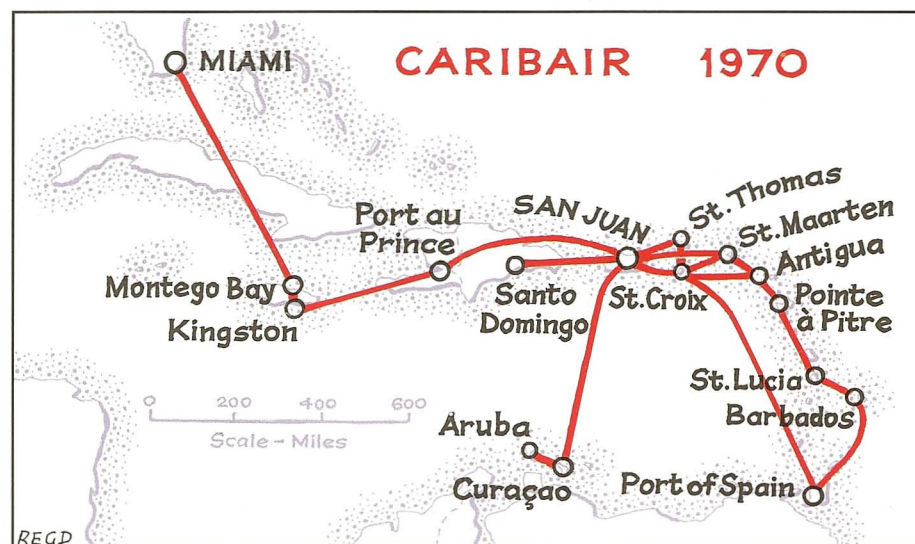


1948

1949



1970





# Caribair

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
<b>Lockheed 18-50-01 Lodestar</b>			
NC25687	2039	Apr 45	Leased from National Airlines. Damaged 8 Jan 47 in landing accident at Jacksonville; repaired and used by National

(Other National Airlines Lodestars used as required.)

After the Second World War, Caribair worked closely with National Airlines, which had a fleet of Lockheed Lodestars. Then, like so many post-war airlines, Caribair's fleet during the 1950s and 1960s was the time-honored **Douglas DC-3**. This versatile pre-war twin was well-loved by the pilots, even though it was inclined to ground-loop ("if you can taxi it, you can fly it") and it had no trouble taking off from St. Thomas, in the Virgin Islands, where a hill seemed to block the end of the runway. But Caribair shared in the air traffic boom as the Caribbean Islands became a major tourist destination. With Pan American Airways, which had pioneered the inter-island routes before the war, concentrating only on trunk routes, Trigo's territorial airline's DC-3s kept the U.S. flag flying around the British, French, and Dutch island colonies in the area.

<b>Douglas DC-3</b>			
N1549V	13480		Written off 22 Sep 64, San Juan
N16068	1908		Retired 25 Sep 62
N18940	2006		Retired 17 Aug 62
N21787	2186		Retired 1968
N25679	2176		Retired 17 Aug 62
N28323	2253	31 May 57	Retired 1968
N34970	42966	1963	Retired 1971
N65389	19382	Dec 53	Retired 1967
N79044	9654		Retired 1971
N8011E	4521	June 63	Retired 1968



Caribair chose the pressurized **Convair 340** twin as its DC-3 replacement. This gave the airline a more modern image, but curiously it gave a problem at one of the main stations on the network. The runway at the airfield at St. Thomas headed straight for a low hill, and the 340's climb out, from a longer take-off run, took it alarmingly close to the ridge of the hill. This writer once experienced the doubtful thrill of watching, from a window seat, the ground suddenly coming closer on take-off—giving the impression of failed power—before, thankfully, clearing the crest, with 500 feet of air above the clear waters beneath. Caribair overcame the problem by fitting some of their Convairs with JATO (Jet Assisted Take Off) auxiliary power; and later added turbo-prop **Convair 640s**, with Rolls-Royce Dart engines.

<b>Convair 340/640 (Pratt &amp; Whitney R-2800/Rolls-Royce Dart turboprop)</b>			
N3407	20	30 Jul 65	Converted 10 Nov 65
N3408	21	Mar 66	Converted May 66, Written off, 23 Jan 67, San Juan
			Converted 17 Aug 66
N3410	27	1 Jun 62	Converted 10 Jun 66
N3411	31	28 Mar 62	Converted 18 Feb 66
N3412	32	4 Sep 62	Converted 18 Apr 66
N3417	48	30 Oct 64	Converted 13 Jan 66. Damaged, 25 Apr 67, Isla Verde, Puerto Rico; rebuilt, using left wing of N3408
N3420	64	1 Oct 65	

(All acquired from Braniff. All except N3408 to Eastern Air Lines, 15 May 73—but not operated by Eastern.)

(Photos courtesy: Roger Bentley)



When **Douglas DC-9** twin-jets entered service in December 1967, Caribair was offering service, as far as the Dutch islands of Curaçao and Aruba. But the problems at St. Thomas remained. The top of the offending hill was quite literally sawn off, so as to provide a smooth and safe take-off run for the DC-9s.

Caribair's fortunes had declined, partly because of the growth of the vigorous Prinair, based in San Juan. Had the Civil Aeronautics Board awarded Caribair extra routes, including the coveted Miami gateway, it could have survived. But it was forced to surrender its independence—to Eastern's benefit.

<b>Douglas DC-9-31</b>			
N938PR	47098	1 Jun 67	Leased to ONA, 1 Jun-2 Dec 67; and 24 Mar-14 Oct 68; sub-leased to Sudflug, Apr-29 Jun 68; to Eastern 1 Jun 67
N939PR	47120	12 Dec 67	To Eastern 15 May 73
N967PR	47121	Mar 68	



# Short-Haul Wide-Body

Of the all the claims to "firstliness" that Eastern Air Lines could make, none was more significant than its introduction of the European Airbus into the United States. During Frank Borman's reign, costs had risen dangerously, and the search for airliners with lower costs-per-seat mile was intense. During the summer of 1977, Eastern negotiated an opportunist deal with Airbus in circumstances that were described as "a manufacturer with no customers and an airline with no money."

On 25 August 1977, **Airbus A300-B4**, registration F-WUAX, still smarting from a lost order from Western, was formally delivered to Eastern at Atlanta, and promptly flown to Newark. It was one of four aircraft on a six-month evaluation, negotiated through the Bank of America, in which the airline put the aircraft through its paces, with no binding undertaking to buy. But Eastern liked it, and bought it. The fourth aircraft was delivered on 2 December, and scheduled services on the New York-Miami "Gravy Run" began on 13 December. Interestingly, such was the reluctance at that time to admit to buying a foreign-built airliner that they were marketed simply as the **A300 Whisperliner**. In any event, by demonstrating that, with two engines, it could do almost the same job as the Lockheed tri-motor L-1011, it won its spurs, and was the forerunner of the European manufacturer's successful invasion of North America..

## EASTERN'S AIRBUSES

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
<b>Airbus A300-B4-103</b>			
N201EA	041	3 Dec 77	Returned to BA Leasing and Capital Corp., 18 Mar 91 (leased to Eastern Dec 88 and withdrawn from use, Jan 91)
N202EA	042	19 Nov 77	
N203EA	043	29 Oct 77	
N204EA	044	24 Aug 77	
N205EA	065	15 Nov 78	Sold to United Aviation Services, Jan 89
N206EA	066	15 Nov 78	(N404UA and N405UA)
N207EA	067	11 Dec 78	Sold to United Aviation Services, 13 Sep 88
N208EA	068	12 Oct 79	(MSN068: N403UA)
N209EA	086	14 Nov 79	Leased to Continental Airlines, 6 May 87;
N210EA	087	15 Nov 79	sold to Public Services Resources, 28 Dec 88 Leased to
N212EA	091	30 Nov 79	Continental Airlines, 5 Jun 87; sold
N213EA	092	10 Dec 79	to Progress Potomac Capital Venture, 28 Dec 88
N215EA	108	10 Jun 80	Leased to Continental Airlines, 8 Jul 87; sold to Potomac Capital Investment, 28 Dec 88
N216EA	118	13 Oct 80	Sold to United Aviation Services, 23 Aug 88 (N401UA)
N217EA	119	22 Oct 80	Leased to Continental Airlines, 15 May 87; sold to Potomac Capital Investments, 28 Dec 88
N219EA	120	1 Dec 80	Sold to United Aviation Services, 1 Sep 88 (N402UA)
N220EA	124	10 Dec 80	Sold to United Aviation Services, 3 Dec 89 (N407UA)
N221EA	152	7 Oct 81	Sold to Pacificorp Finance Inc., 31 Jan 89; (leased back to Eastern until 18 Mar 91)

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N222EA	153	5 Oct 81	Leased to VIASA (Venezuela) 21 Jul-15 Dec 89; sold to and leased back from Electra Aviation, 23 Mar 90-18 Mar 91
N223EA	154	9 Nov 81	Sold to Electra Aviation Ltd., 23 Feb 90
N224EA	155	9 Oct 81	Sold to Electra Aviation Ltd., 2 Feb 90
N225EA	158	24 Nov 81	Repossessed by General Electric Capital Corp., 18 Mar 91
N226EA	161	4 Dec 81	Repossessed by Connecticut National Bank, 18 Mar 91
N227EA	204	14 Oct 82	Sold to United Aviation Services, 23 Nov 89
N228EA	207	21 Dec 82	Sold to Electra Aviation Ltd., 23 Mar 90
N229EA	211	22 Dec 82	Sold to and leased back from Electra Aviation Ltd., 23 Mar 90-18 Mar 91
N230EA	216	22 Dec 82	Sold to Electra Aviation Ltd., 26 Mar 90
N231EA	220	29 Dec 82	Leased to Continental Airlines, Dec 89; sold to Electra Aviation Ltd., 8 Feb 90
N232EA	259	16 Dec 83	Sold to Electra Aviation Ltd., 30 Jan 90
N233EA	261	16 Dec 83	Sold to Electra Aviation Ltd., 23 Mar 90
N234EA	271	19 Dec 83	Sold to Electra Aviation Ltd., 23 Mar 90
N235EA	274	19 Dec 83	Sold to and leased back from Electra Aviation, 23 Mar 90-18 Mar 91
<b>Airbus A300-B2-202 (converted to B300-B2K-203, Jan 79)</b>			
N291EA	049	16 Jan 80	(Previously leased to Iran Air, 7 Mar 78-1 Jan 79); sold to Buffalo Airways 8 Jan 88
N292EA	051	7 Jan 80	(Previously leased to Iran Air, 6 Mar 78-1 Jan 79); sold to ATASCO Leasing, 10 Mar 88

The two A300-B2 Airbuses were acquired specifically for the Air-Shuttle services, where the traffic demand justified a large-capacity aircraft. But the F.A.A. would not permit the A300 to use Washington's downtown National Airport, so that it was restricted to the New York-Boston Air-Shuttle only. Meanwhile, as described on this page, the Airbus "took off" in North America, and its marketing success can be traced back to a remarkable episode of innovative airliner procurement.



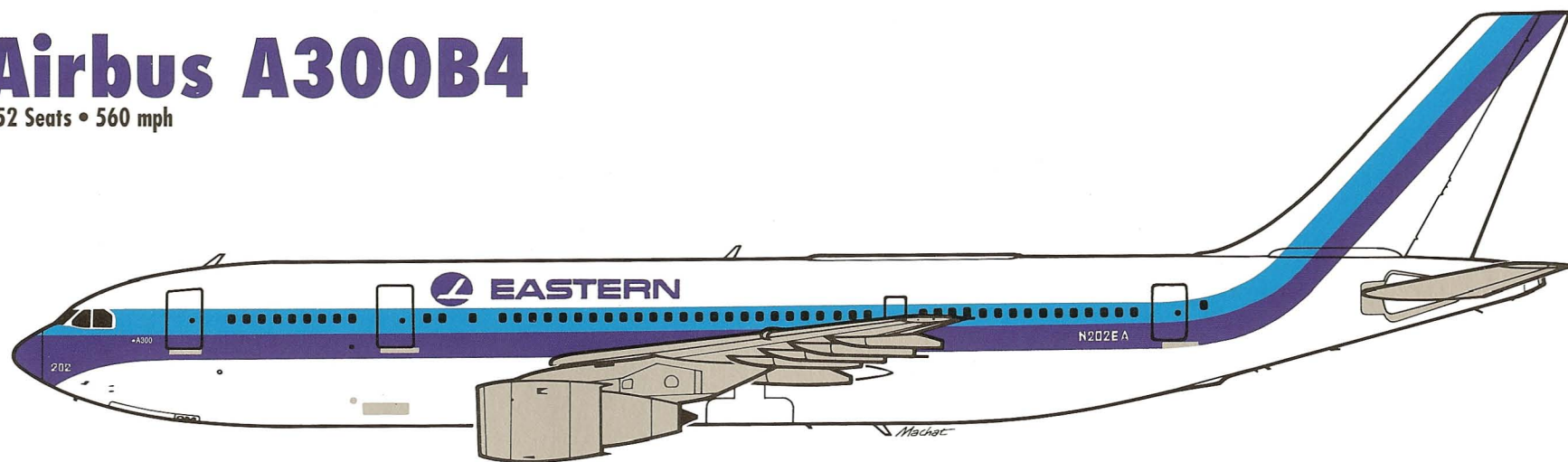
*This Airbus A300B4 (N215EA), pictured here at Atlanta, was the first to be delivered to Eastern Air Lines under the innovative six-month evaluation program that led to the first United States order for the now-popular European wide-bodied twin. (photo courtesy Roger Bentley)*





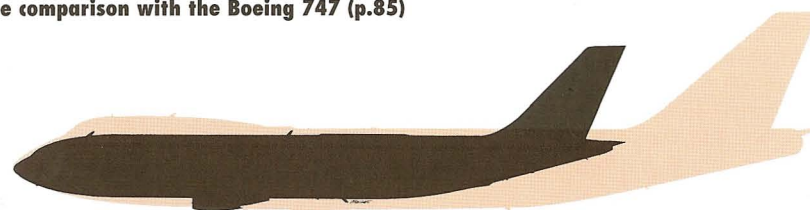
# Airbus A300B4

252 Seats • 560 mph



Engines	General Electric CFG-50C (51,000 lb. thrust) x 2
MGTOW	165 tons
Max. Range	2,800 miles
Length	176 feet
Span	141 feet

Size comparison with the Boeing 747 (p.85)



The B4 variant of the Airbus family was developed as an improved version of the original A300, the world's first twin-engined wide-bodied airliner. This was conceived on both sides of the English Channel (La Manche) in the mid 1960s. The British Hawker-Siddeley company had an "Airbus" design, and so did the French, with the "Galion." The two combined in a joint project, the **HBN-100**, which soon became the Airbus.

At first an equally shared venture, a third partner, Germany acquired a 20% interest in the late 1960s. The British Government withdrew, and the Germans took over the share; but Hawker-Siddeley, later British Aerospace, continued to build the wings under contract. Today, Spain has a minority interest, and other countries are involved as sub-contractors. From small beginnings—Airbus had a tough time during the 1970s, trying to break in to the captive markets of well-established manufacturers—but eventually, those industrial fastnesses were eroded, and today, with an entire range of airliners to meet almost any requirement, the Toulouse, France-based production lines supply half of the world's demand.



# Borman Battles On

In the mid-1970s, with the prospect of airline deregulation in 1978 looming, and with the effects of the fuel crisis of the early 1970s still a recent memory, Eastern's fortunes seemed uncertain. It had had two fatal accidents and a lucky escape after a heavy landing. After a profitable 1974, when all the airlines increased their fares, heavy losses were foreseen for 1975. At board level, the mood was that more discipline was needed throughout the whole airline.

On 16 December 1974, **Colonel Frank Borman**, famous astronaut, already a vice-president, was appointed president and C.E.O., and Floyd Hall became chairman. Borman's first move was to freeze wages throughout the company's 32,000-strong workforce. He reduced the vice-presidential corps by half, and re-structured the \$1.5 billion debt. He also eliminated the "two-headed monster"—effectively duplicated headquarters in New York and Miami, in favor of the latter.

Competition in Eastern's best markets was intensifying. Delta had bought Northeast, and was cutting in to the routes to Florida and through Atlanta; and American had bought Trans Caribbean to provide stiffer service to San Juan. Eastern's cost levels, by any measure, were high, compared to the rest of the industry; and part of the reason was that the Lockheed L-1011 TriStar, a fine aircraft, did not quite fit the predominantly short-haul characteristics of the network. Accordingly, Borman invested in one that did fit: the European **A300B4 Airbus**—see pages 92-93.

Things went well for a time. On 27 November 1977, no less than 132,482 passengers were carried in one day. Three days later, the trusty L-188 Electra was finally retired. Author Robert Serling remarked "never has an aircraft had so many strikes against it and turned out to be such a competitor." But improved technical excellence was not enough to obscure the airline's bad reputation for poor service standards, that had, in earlier times, even spawned an organization called WHEAL—We Hate Eastern Air Lines.

Identifying the need for an aircraft that was effectively a Boeing 727 replacement, he negotiated with Boeing to build a twin engined version of the 727, the **Boeing 757-200**, with two powerful Rolls Royce RB 211 engines—see page 96-97. Ordered on 23 March 1979, this aircraft went into service on 1 January 1983. And Eastern was also the beneficiary of

Braniff International Airways's demise in 1982, when it took over its South American routes on 14 May 1982. (See p.95)

But all was not well on the home front. The wage freeze was predictably unpopular, and had not promoted a spirit of loyalty or, more important, efficient productivity. Strike action was averted in 1982, when a 21% pay increase was awarded to the International Association of Machinists and Aerospace Workers (I.A.M.). **Charles Bryan**, Miami's District Lodge 100 president, approved, but layoffs continued.

Eastern's loan commitments for its new aircraft were enormous, and the airline was in acute danger of defaulting. The bankers refused to extend credit unless there was some indication of worker cooperation. Thus, on 6 May 1983, an agreement was reached with the Airline Pilots Association (ALPA) for it to acquire 25% of Eastern's stock, in exchange for forgoing pay increases, to fly 85 hours monthly, instead of 80, and to reduce vacation time.

But this was not enough. Borman estimated that about three-quarters of the high costs were labor-related, and, to avoid bankruptcy, on 26 September 1983 he attempted another deal with the unions. In return for an across-the-board pay reduction of 15%, and other concessions, workers would receive 20% of all resultant profits. The flight attendants reached a modified agreement on 12 October.

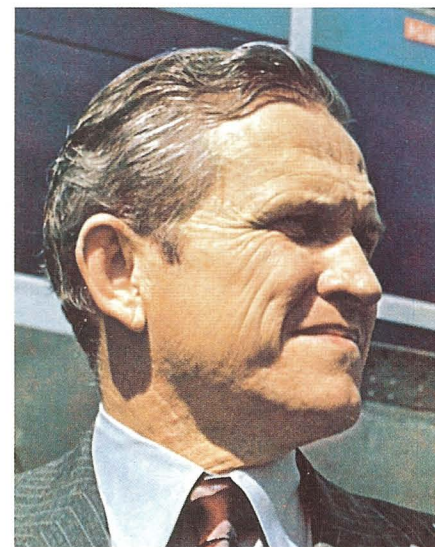
On 13 December, Eastern opened an operational hub at Kansas City, in an effort to better penetrate the transcontinental market, where the other airlines had consolidated their hub positions at Chicago, St. Louis, and Dallas. But this was only a palliative, and the ex-Braniff South American market accounted for only 2% of revenues.

Eastern lost \$184 million in 1983, in spite of the belt-tightening. In a desperate move, on 24 April 1984, I.A.M.'s Charles Bryan and the Transport Workers Union's (T.W.U.'s) Robert Callahan were elected to the 22-member Board, where two other members already represented labor. This unprecedented action came at a cost. Severe pay cuts for 37,000 employees were estimated to be worth \$360 million.

But the bleeding continued. The reductions in salaries and wages were not enough to cover the high expense of the debt

payments to the lenders who had financed the large fleets of Airbuses and 757s. The incursions of Delta and American into Eastern's revenue base had been exacerbated after the 1978 deregulation by low-fare airlines, Florida Airways, New York Air, and People Express. The year 1985 was marred by constant labor unrest, and by July 1985, with mildly improved financial results, there were strong rumors of a possible take-over, with Carl Icahn's T.W.A. and Frank Lorenzo's Texas Air Corporation strong favorites.

On 4 February 1986, Eastern began to furlough more than 1,000 of its flight attendants, as it sought further wage concessions. Otherwise the creditors would foreclose on the now \$2.5 million long-term debt—\$1 million more than when Frank Borman took the helm at the end of 1975. On 24 February, after failing to obtain any concessions, Eastern capitulated. It tentatively agreed to be acquired by the **Texas Air Corporation**, owned and directed by Frank Lorenzo, and on 1 October 1986 the Department of Transportation gave final approval to the sale, for \$676 million.



*Frank Borman, ex-astronaut, ruled Eastern's fortunes from 1975 until 1986. With an ageing fleet, rising costs, heavy competition, and recalcitrant labor unions, and with \$2.5 billion long-term debt, he finally gave way to a take-over by the Texas Air Corporation on 1 October 1986.*



# Intercontinental Routes

During Frank Borman's presidency, Eastern's international route mileage increased considerably, and from trans-border connections to Mexico and Canada, and route to the Caribbean, it became an intercontinental airline in the mid-1980s.

## South America

Braniff International Airlines had collapsed, when it over-expanded during the post-deregulation frenzy of the late 1970s and early 1980s. It had taken over the PANAGRA network which dominated the west-coast routes of South America, and this had to be maintained without unnecessary interruption in the political interests of the United States. With uncharacteristic speed, the authorities acted, and within a few days, President Reagan approved a C.A.B. decision to transfer the routes to Eastern. Pan American Airways was overlooked as Washington did not wish to restore the monopoly of South

American routes that Pan Am had formerly enjoyed. Eastern took over the routes officially on 14 May 1982, but Braniff continued to operate as a matter of operational convenience until 1 June. Services terminated at Santiago for several months until the political problems of the Falkland Islands restored stable conditions in Buenos Aires.

## The Atlantic

Three years later, Eastern added another continent to its international network. During bilateral negotiations with Great Britain, Air Florida had joined Pan American to fly from Miami to London, but it had also joined the list of airlines that did not survive the severity of post-deregulation competition. On 15 July 1985, Eastern began non-stop Miami-London (Gatwick) service, using McDonnell-Douglas DC-10s because its Lockheed TriStars did not have the range.

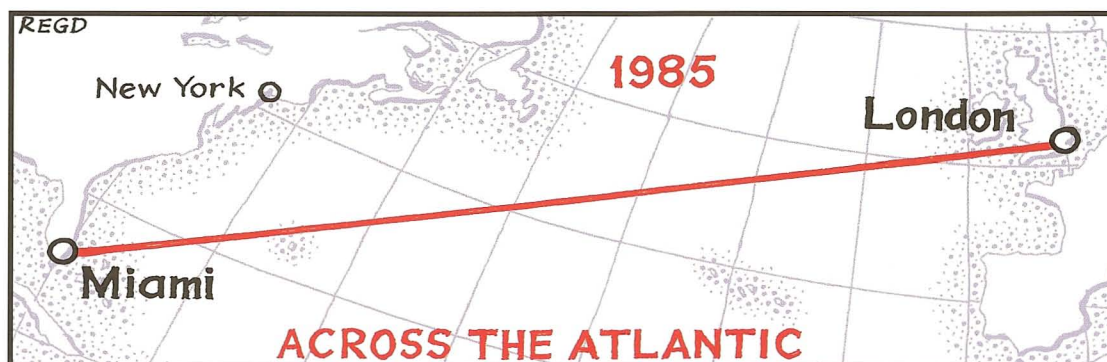


Leased from Polaris Aircraft Leasing, this DC-10 was in all-metal finish.



**EASTERN'S DOUGLAS DC-10s**

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N390EA	47862	15 Jan 86	Leased from Alitalia until 9 Oct 86
N391EA	47866	27 Jun 85	Purchased from Alitalia; sold to and leased back from Walker Leasing Corp., Oct 85-7 Jan 86; sold to and leased back from Westinghouse Credit Corp., 7 Jan 86-21 Sep 90
N392EA	47967	29 Nov 85	Leased from Polaris Aircraft Leasing, 29 Nov 85-28 Sep 90



**PickADilly.**  **EASTERN**

**Eastern to London.**

The Eastern Air Lines London connection did not last very long but it was promoted with flair.



# Last of a Fine Line

By the mid-1970s, Eastern's fleet was not only showing signs of middle age; it was also unbalanced. The Boeing 727s and the Douglas DC-9s still reigned supreme in the 100-160-seat range of seating, but the 293-seat Lockheed L-1011 TriStars and the 240-seat Airbus A300B4s left a big gap in the range of cabin layouts. The Hobson's Choice was often between adding extra frequencies, with the accompanying higher costs, to cope with traffic demand on individual routes; or to operate the larger aircraft at uneconomically low load factors (percentage of seats filled).

Frank Borman began negotiations with Boeing, which, always looking ahead, had been studying the idea of stretching the twin-engined 737 into what was tentatively designated the 136-seat 7N7. On 20 February 1978, Boeing made a firm proposal for the 150-seat 757-100, which was now a derivative of the 727, with two powerful wing-mounted engines replacing the three at the rear of the fuselage. But this

was no bigger than the veteran 727-200, and with Eastern pressure, the Boeing's final specification was defined on 12 July 1978. Virtually custom-built for Eastern, the Boeing 757-200 had 185 seats—about halfway between the seating capacity of the existing 727s and the two wide-bodied types.

For Boeing, this was a promising development, for the fuselage cross section of the 757 was the same as those of the 707 (the original long-haul jet that had revolutionized air travel in the late 1950s), the 727, and the 737. The economies of production helped to keep the price of the 757 down to an acceptable level. In one way, Boeing was gambling, as it was also launching its wide-bodied 767 at the same time; and so it was apparently competing with itself. But the airlines did not look at it this way. They had a choice between two fine airliner designs; and in due course, Boeing was highly successful with both.

Interestingly, Eastern's American-built Boeing 757-200s had British Rolls-Royce engines, the RB211-535E4 turbofans. Its European Airbus A300B4s (wings built in Great Britain) had American-built General Electric CF6-50C engines.

So, even in its twilight years, with high labor costs competing with declining revenues, resulting in rising and ultimately crippling debt, Eastern Air Lines was still in the vanguard of technological development. It had pioneered the entry of the Airbus into North America. And now it did the same to launch Boeing's latest. There is always a price to pay for being first. The launching customer invariably has to bear the brunt of the inevitable "teething troubles," has at least to share the cost of rectifying them, and watch other airlines derive the benefits. Unfortunately, the respect thus given for such contributions to the advancement of the airline industry is never reflected in the balance sheets.

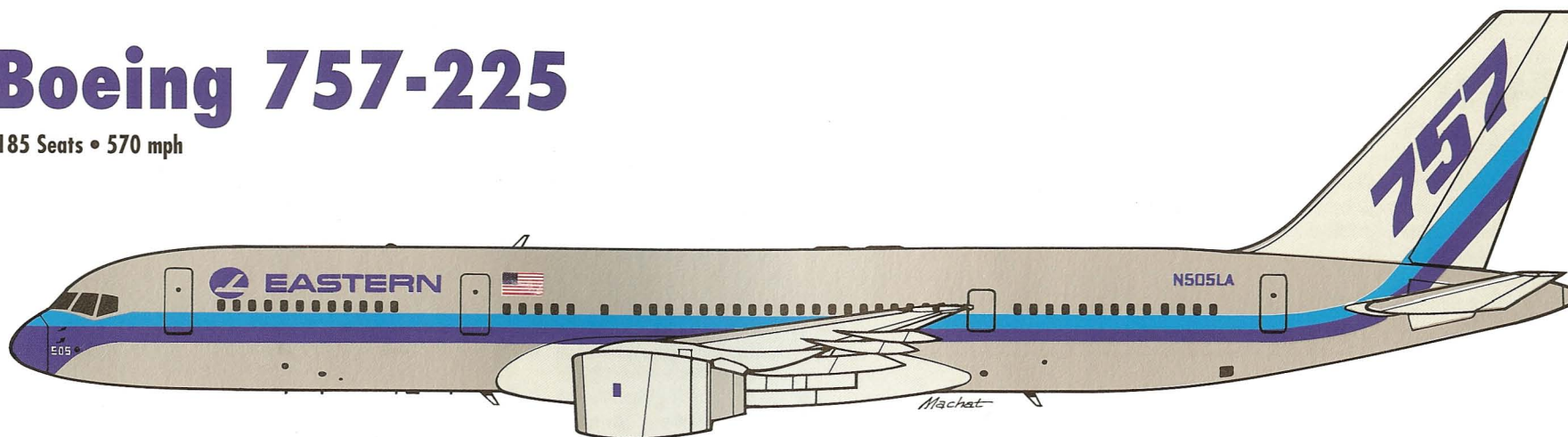


*The Boeing 757-200 was a 185-seat development of a line of Boeing jet airliners that had a common single-aisle fuselage cross section. Beginning with the long-range four-engined 707, the tri motored 727 followed, then the 737 twin. The 707's engines were in wing-mounted pods; the 727's were rear-mounted on the fuselage; the 737's again on the wings. The 757's too were wing mounted, following a world-wide trend.*



# Boeing 757-225

185 Seats • 570 mph



Size comparison with the Boeing 747 (p.85)



*Artist's Note: With transcontinental range, the Boeing 757 had the same fuselage cross-section as the Boeing 707/727/737 family; but it featured an advanced two-man "glass cockpit," plus uprated engines for enhanced performance.*

Engines	Rolls-Royce RB211-535 (38,000 lb. thrust) x 2
MGTOW	120 tons
Max. Range	2,800 miles
Length	155 feet
Span	125 feet

## BOEING 757-225

Regn.	MSN.	Delivery Date	Remarks and Disposal
N5101EA	22191	18 Aug 83	Sold to NASA, 8 Dec 94 (N557NA)
N502EA	22192	28 Sept 83	
N503EA	22193	25 May 83	
N504EA	22194	28 Feb 83	Sold to GE Capital Corp, 12 Jul 91
N505EA	22195	20 May 83	
N506EA	22196	22 Dec 82	
N507EA	22197	28 Dec 82	Sold to Air Fleet Credit Corp, 13 Oct 94
N508EA	22198	18 Feb 83	
N509EA	22199	15 Apr 83	
N510EA	22200	28 Jun 83	Sold to GE Capital Corp., 12 Jul 91
N511EA	22201	28 Jul 83	
N512EA	22202	19 Aug 83	
N513EA	22203	9 Nov 83	Sold to Air Fleet Credit Corp., 13 Oct 94
N514EA	22204	14 Nov 83	
N515EA	22205	14 Dec 83	
N516EA	22206	26 Feb 85	Sold to GE Capital Corp., 12 Jul 91
			Sold to Connecticut National Bank, May 85 (leased back to Eastern, May 85-18 Mar 91) (This aircraft crashed near Porto Plata, Dominican Republic, 6 Feb 96)

Fleet No.	MSN.	Delivery Date	Remarks and Disposal
N517EA	22207	29 Oct 84	Repossessed by Wilmington Trust Co., 18 Mar 91
N518EA	22208	30 Oct 84	
N519EA	22209	21 Nov 84	
N520EA	22210	30 Nov 84	Repossessed by Wilmington Trust Co., 18 Mar 91 (leased to Eastern from 18 Dec 85)
N521EA	22211	6 Dec 85	
N522EA	22611	5 Dec 85	Repossessed by Wilmington Trust Co., 18 Mar 91
N523EA	22612	11 Nov 86	
N524EA	22688	19 Dec 86	
			Returned to and leased back from Wilmington Trust Co., 30 Dec 86; sold to United Aviation Services, 26 Jan 90
N525EA	22689	19 Dec 86	Sold to United Aviation Services, 28 Dec 89
N526EA	22690	-	
N527EA	22691	-	Built for Eastern but not delivered. Delivered to Mexican Air Force, 16 Nov 87 (TP-01/XC-CBD, then TP-01/XC-UJM)
			Built for Eastern but not delivered. Delivered to America West Airlines, 10 Dec 87

N512EA was named Spirit Of Milwaukee in 1984.

**BOEING**



# Eastern Express

Eastern Air Lines can claim to have been the first major airline to adopt a commuter airline in a code-sharing partnership. This was **Metro Airlines**, of Houston, Texas, and on 1 October 1983, all Metro's Twin Otter flights were re-designated as **Eastern Metro Express**. In April 1984, when Continental Airlines added competition at Atlanta, with de Havilland Dash-8s and BAe Jetstream 31s, the Houston operation was called Metroflight, Inc., while the Atlanta one was named Eastern Metro Express.

The Texas Air Corporation, in December 1986, purchased PeopleExpress, with its subsidiary, **Provincetown-Boston Airlines (P.B.A.)**. On 1 February 1987, through its Continental Division, P.B.A. became Continental Express, and in May 1987 was merged with **Bar Harbor Airlines** and a cooperative agreement was signed with Eastern. The fleet included Beech 99s, Beech 1900s, Convair 600s, and CASA 212s. In 1986, the operation was consolidated as **Eastern Air Express**, and in April 1989, became Continental Express, under Texas Air control.

P.B.A. had an operation in Florida, when most of its fleet was transferred from the chilly northeast to the sunny south, for the vacation traffic. On 1 May 1987 most of the Florida routes were abandoned, except for the Miami-Marathon service. In the summer of 1988, P.B.A. became Eastern Air Express, and this was terminated in September of that year.

**Precision Airlines**, founded in June 1977 to connect communities in Vermont and New Hampshire with Boston, became an affiliate on 1 May 1986; but became a Northwest Airlink operator when Eastern ceased operations. **Atlantis Airlines**, based at Myrtle Beach, South Carolina, was the first airline to be formed after the 1978 Airline Deregulation Act. It was purchased by Metro on 15 February 1989, as another Eastern Express company. It bought Air Carolina in 1980, and moved to Florence.

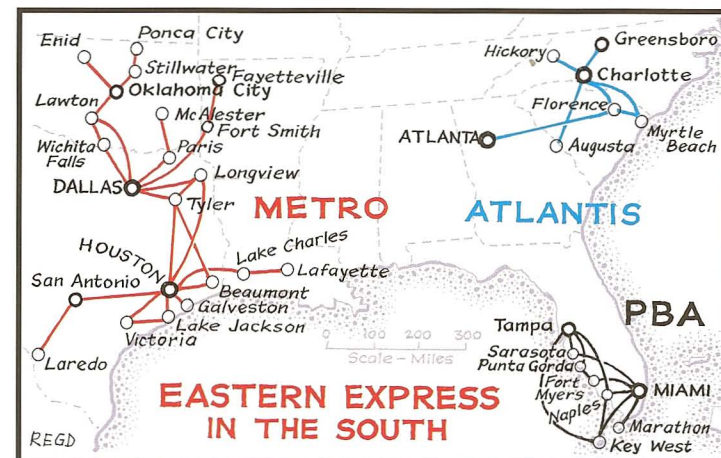
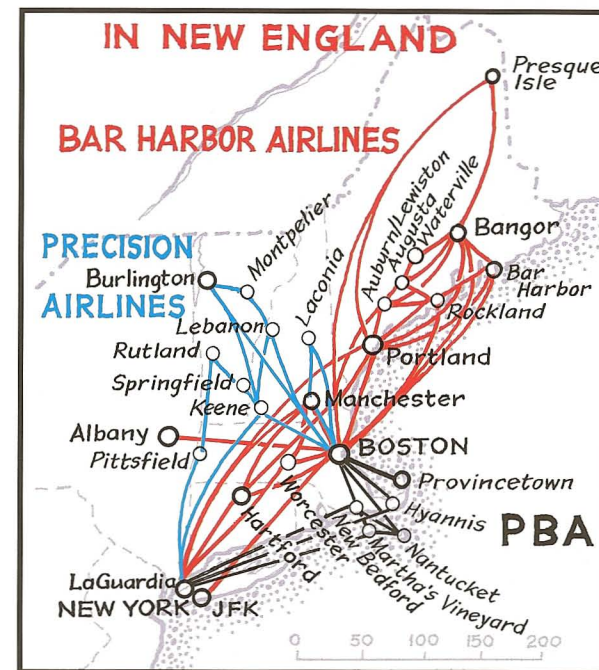
Supplementing Eastern's Caribbean connections, **Sunair**, based at St. Croix, became an Eastern Metro Express carrier on 15 November, and was renamed Sunair Express when the parent airline came to an end on 19 January 1991.



One of Eastern Metro Express's SAAB SF-340As  
(photo courtesy Douglas Corrigan Collection)



This is a famous DC-3. Originally delivered to Eastern in October 1937 (see fleet list on page 32), and serving with the military as a C-49 during the Second World War, it went to P.B.A., through which, as described on this page, it returned to the Eastern fold. It was the high-time DC-3 (91,402 flying hours) and was restored in "hockey-stick" colors by Bob Irvine in 1993. (Photo by Phil Glatt, courtesy Jon Proctor)





# Lorenzo v. the Unions

On 24 February 1986, the Texas Air Corporation agreed to buy Eastern Air Lines for \$600 million. The Department of Transportation approved the acquisition, for \$676 million, on 1 October 1986. Frank Lorenzo, the Chairman and C.E.O. of Continental Airlines, of which Texas Air was the parent corporation, succeeded Frank Borman to take charge of Eastern Air Line's destiny. Phil Bakes former president of Continental, became president and C.E.O. of Eastern, succeeding Joe Leonard, who had been president of Eastern since September 1985. They inherited a huge debt, and no doubt were confident of planning a resurgence of good fortune for the airline, although the means of doing so were not clear. Lorenzo's credentials were, from the start, the subject of controversy, as he had a record of Draconian-style management, and was known to be no great friend of the labor unions, including (and perhaps especially) the pilots' ALPA. But with its seriously mounting financial problems, which had reached crisis level, the airline was prepared to see how things worked out. Charles Bryan, the leader of the Miami chapter of the International Association of Machinists (I.A.M.) union, was even quoted: "I'd just as soon take my chances with Lorenzo."



*Frank Lorenzo defends his case*

From the start there were strong rumors that Lorenzo's ultimate plan was to merge his new acquisition with Continental, and thus create a major airline to rival industry leaders American Airlines and United Airlines. In fact, with the addition of People Express and Eastern to the Texas Air Group early in 1987, Texas Air controlled the largest passenger airline network in the western world, offering one out of every five seats, and thereby displacing industry leaders American and United. Had such a merger been consummated, it would have been the biggest in the western world. First, however, economies had to be made.

Almost immediately, Lorenzo negotiated to dispose of the famous New York-Washington, New York-Boston Shuttle service. In May 1986, slots and gates at the airports were sold to Pan American for \$65 million; and this was trumped (if such a term could be applied) by the sale, later, in October 1988, of the Shuttle itself to real estate developer Donald Trump, for \$365 million. This included 17 Boeing 727-200s and about 90 slots. (The Air-Shuttle was said to be profitable—but no figures were ever shown to prove or disprove this. With such short stage distances, and, at the time, reserve aircraft and reserve stand-by crews, this was unlikely—and Lorenzo was not one to sell anything that was making money.)

Early in 1987, Eastern leased six Airbus to Continental (now a sister company under the Texas Air umbrella) for \$225,000 per aircraft per month. But six months' revenue from this source was needed to settle, on 10 February 1987, an F.A.A.-imposed penalty for alleged safety infringements in maintenance. (Interestingly, the safety record of, for example, Eastern's 165 Boeing 727s was superb. Of the entire fleet, operating for about 10 hours a day for about 18 years, only two crashed, one through unforeseen wind-shear at JFK, and one in the unforgiving Andes Mountains. The maintenance could not have been too bad).

But the bleeding continued. In November 1987, a further depletion of 3,500 more personnel layoffs was announced. On 31 December, the contract with I.A.M. expired, and the threat of a strike began to smoulder. By July 1988, Eastern was still losing a million dollars a day, but the I.A.M. called for a 6.6% wage increase. One idea was to downsize the airline by 12 %, and on 1 September the Kansas City hub was eliminated. This was a sensible move, as T.W.A. virtually "owned" that hub. And as narrated above, the Shuttle was sold to Trump.

This was all in vain. On 10 February 1989, Eastern announced a \$718 million loss for the 1988 year. On 1 March the F.A.A. gave its blessing to the Trump Shuttle. On 4 March, Eastern's pilots and flight attendants also honored the picket line, in support of the machinists. On 9 March, the I.A.M. went on strike and Eastern declared bankruptcy under Chapter 11 of the Bankruptcy Laws.

Throughout the period of crisis, the relationship between the ownership and the employees could not have been worse. Frank Lorenzo was an intransigent negotiator, and had the annoying habit of proposing further discussions after agreements were thought to have been made. Charles Bryan, on behalf of his union, was determined to uphold the workers' rights and was embittered by his previous experience with repeated concessions under Frank Borman. The pilots had never forgiven Lorenzo for the dispute at Continental, when he had shut down the airline rather than concede to ALPA's demands, and then rejuvenated it 48 hours later, on his own terms.



*Charlie Bryan on the job.*



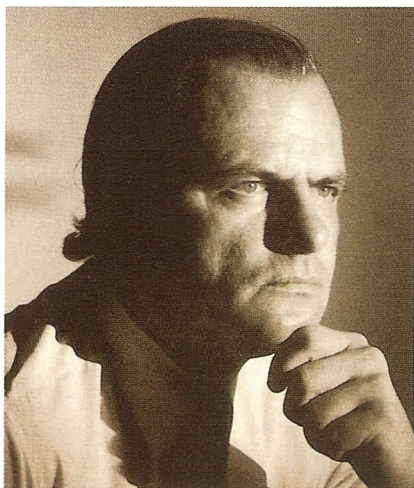
# The Final Hours

The prolonged and bitter dispute took its toll. The publicity given to it affected the travelling public, who deserted Eastern flights in favor of competitors. And they were hardly encouraged by picketing mechanics, pilots, and flight attendants who were conducting a campaign against Lorenzo.

The airline struggled on, even trying to open service to one or two more destinations, but it was losing traffic everywhere. On 7 April 1989, Peter Ueberroth, the former baseball commissioner, made a bid to buy Eastern. Jay Pritzker of Hyatt Hotels also made an offer. Both were refused, in favor of a plan to rebuild the airline on a smaller scale.

In the spring of 1989, Eastern was down to about 100 flights a day (from 1,040 a day) and a work force of only 1,500. By October, the airline had made a remarkable recovery to 700 flights a day, with 12,000 employees. 800 pilots had returned, plus 1,000 replacements. 1,350 flight attendants had retired and another 1,350 hired. Only 300 mechanics had crossed the picket line, however, to join 1,600 new ones.

Eastern was again running well. It had the best on-time performance record in the industry, except in March, when the strike occurred. A safe airline was being operated under close



*Marty Shugrue contemplates the formidable task facing him in 1990*

F.A.A. scrutiny. But the airline was downsizing. By the end of 1989, the Air Shuttle had been acquired by Donald Trump, and the Latin American routes to 15 countries were sold to American Airlines, which took over on 1 July.

The campaign against Lorenzo continued, but the pilots did end their sympathy strike, along with the flight attendants, on 22 November. That winter, disturbing reports filtered through from the business community, including one in February 1990 that the creditors might agree to accept 50¢ in the dollar. On 1 March, Texas Air agreed to pay \$280 million to Eastern to avoid a court case; and criticism of Texas Air's transfer of Eastern's computerized reservation system, System One, to Texas Air for \$100 million received much adverse comment, as a fair price was claimed to be more like \$250 million.

Things came to a head on 13 April 1990, when the creditors lost patience and urged a federal judge, Burton R. Lifland, to take control away from the management. This was a euphemism for "get rid of Lorenzo." Accordingly, on 18 April, Lifland appointed Martin Shugrue as a special trustee, as an "extraordinary remedy." This was the biggest defeat in Lorenzo's career, as some of the words used were "for cause, including incompetence." Frank may have been a terrible negotiator, and may have seriously lacked judgement. He was a loner, not a committee or a party man. But few would have regarded him as incompetent.

Marty Shugrue had learned from the school of hard knocks, having had a top-level dispute in 1986 with president Ed Acker when he was chief operating officer (C.O.O.) of Pan American. This had resulted in both of them losing their jobs. Then he was president of Continental Airlines for a year and a day in 1988-89, but had left, presumably not seeing eye to eye with Lorenzo, whose Texas Air owned Continental.

By the summer of 1990, Lorenzo had had enough of the airline industry. It was time, he said, to move on, which meant leaving the airline industry and going back to the financial investment business, which was where he had started, many years previously, when his Jet Capital Corporation had purchased the struggling Trans-Texas Airways. On 13 August 1990, he handed over the chairmanship of Continental Air

Holdings, Inc. (the renamed Texas Air Corporation) to Hollis Harris, and sold his 9.9% stake to the Scandinavian S.A.S. for \$30 million.

On 27 November, Judge Lifland gave Eastern \$135 million more from escrow funds (making \$150 million total) but this was only a palliative. The December 1990 financial results were dismal, with fear of war in the Middle East and a poor national economy. The airline was losing \$2.5 million per day, and the money kept it going only through Christmas and the New Year.

On 15 January 1991, the *Wall Street Journal* reported that Eastern's unrestricted cash had dwindled perilously low. On 16 January, the Gulf War broke out.

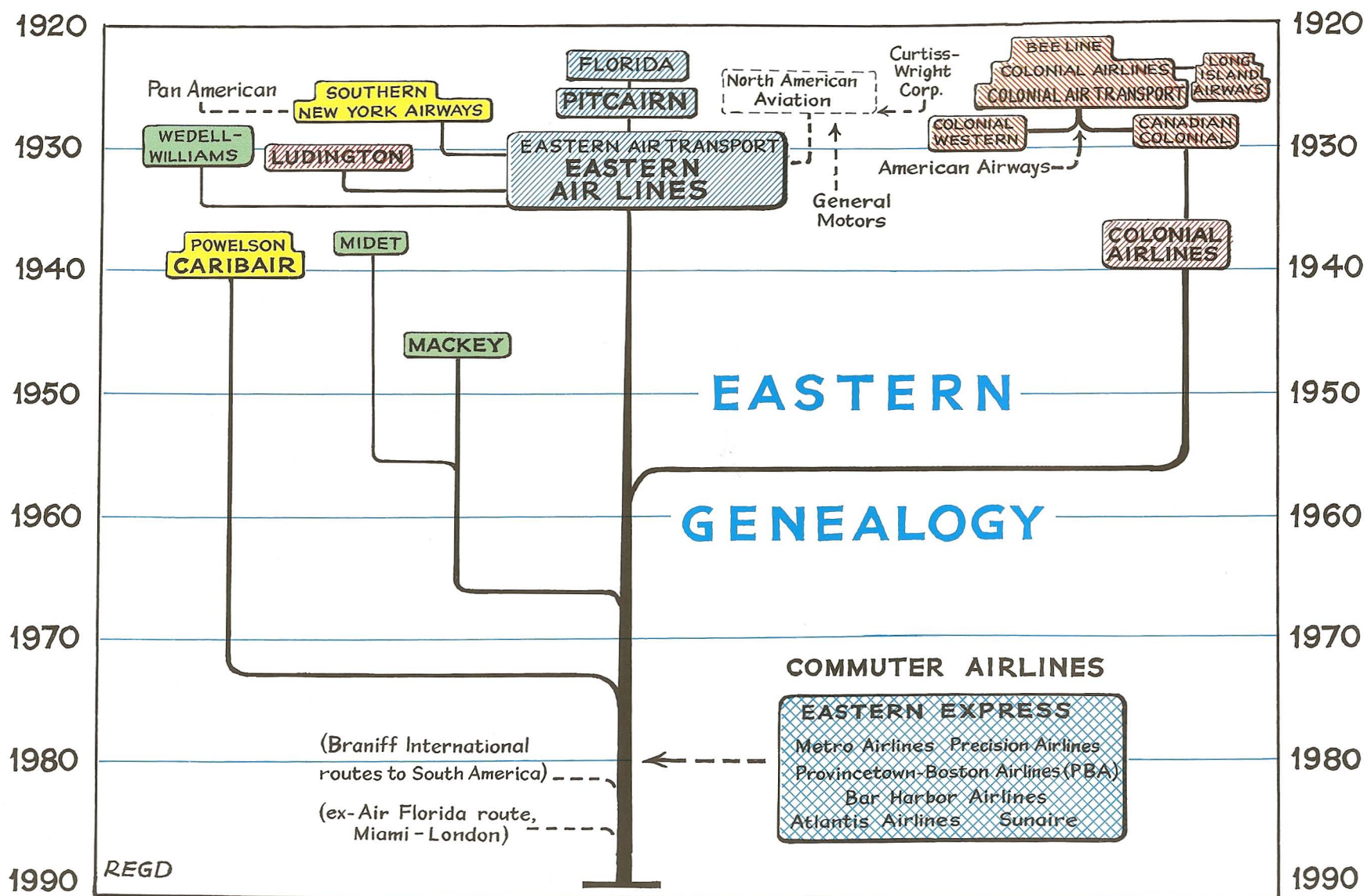
At midnight on 18 January 1991, Eastern Air Lines, once the largest in the western world (in terms of passengers carried), ceased operations, and 19,000 employees were out of work. The vultures descended and the sale of the remaining assets began, in an effort to repay at least some percentage of the crippling debt to some of the long-suffering creditors. Aircraft, airport gates and slots, installations, furniture, every possible saleable item, were sold in the sad process of asset liquidation.

## Postscript

The downfall of Eastern was a case of "woe are the mighty fallen." Only six years before the debacle, when United Airlines was on strike, it was able to remind the air travelling public of its pre-eminent role. Already trading on its popular slogan "The Wings of Man," it added another: "America's Favorite Airline." This was later imitated by British Airways to suit its worldwide system as "The World's Favourite Airline."



# The Eastern Family Tree





# Acknowledgements

First, in this customary recognition of all the people who helped to bring this book into fruition, let me start at the beginning, and acknowledge Eastern's John Sicilian and **Roland Moore**, who set the wheels in motion, and **Davis Tompkins** and **Vito Borrelli**, who stoutly kept the ball rolling. Unless otherwise indicated, all photographs in this book were selected from Eastern's archives. Additionally, I was able to draw upon the generous help given by innumerable airline photograph collectors, without whom this book would not have been so well illustrated.

Foremost among these stalwarts was **Roger Bentley**, a tower of strength among collectors, and generous to a fault, whose impressive slide collection was raided on numerous occasions. On my behalf, he also drew upon the rare shots taken many years ago by veteran photographer **Art Carter**, who was haunting the airport ramps long before most of us took much interest in airlines and airliners. **John Wegg** and **Jon Proctor** filled in some valuable gaps from their own attics.

As with all historical researchers, I was able to glean information on long-forgotten airline episodes from the works of other aficionados. These included **Rick Allen**, whose authority on the old Lockheeds and, for that matter, any air transport machine that flew before the DC-1, is supremely authoritative. **Bill Larkins**, of course, was available to check the Ford Tri Motors. **Imre Quastler**, with whom I once shared the agony of trying to re-discover all the commuter airlines, was consulted, as was **David Goldsmith**, who, in addition to invaluable contributions to fleet details, and meticulous copy-editing, knows a thing or two about Harold Pitcairn and his Mailwings.

The work of **Albert LeShane** on the history of Colonial Airlines was invaluable, and I was especially privileged to be able to use the detailed records of observations made by **D.M. Ives**. As a young lad in the 1920s, he took notes of the early Colonial Fairchilds that flew over his home at Albany, New York; and the notes he made about their numbers and colors must have been one of the earliest examples of what is now a world-wide collectors' hobby—and invaluable to writers like me. **Vince Caire** and **Allen Wiltz** were able to fill me in with details and pictures of the Wedell-Williams airline, to round off the list of data and pictures which at first I thought might be forever elusive. **Sam V. Smith** supplied the fine picture of

Eastern's DC-3 which now hangs in a place of honor at Washington's National Air and Space Museum of the Smithsonian Institution.

As this book is in essence a history of Eastern Air Lines, with emphasis on its fleet of aircraft, we would be remiss by not mentioning also the names of the three key Eastern executives who were primarily responsible for the purchase, sale, and lease of more than 500 Eastern aircraft during the 30 years of its history from the early 1960s through the 1980s. Charles Simons, Chief Financial Officer; Walt Briedenbach, Vice President, Purchasing; and George Dutton, Vice President, Aircraft Sales: these gentlemen have not been fully recognized for the considerable contributions that they made towards their airline by their buying, selling, and trading in billions of dollars' worth of modern airliners.

Then, of course, was the Paladwr team. **Mike Machat** contributed his usual immaculate drawings, plus the one he did when he was nine years old. He was able to tell me a thing or two about his subject airliners, especially his beloved Douglasses, with all their stripes and logos. **John Wegg** kept my steel collar in place regarding technicalities, including the fleet lists of the hundreds of individual airliners, of which the Pitcairns are now authoritatively calibrated. For the modern types, he was assisted—meticulously—by devoted Eastern Air Lines veteran, **Bill Hirsch**, who relieved me of the eternal worry of completing the details of all those DC-3s, 727s, and other airliners in Eastern's armada. As the book came together, **Jackie Scott-Mandeville** tidied up all the fleet lists, and graphic designer **Liz Weaver** was admirably patient with my eternal additions, changes, corrections, and, I hope, improvements, on draft after draft of the pages, as we strove to condense so much information into a book that would not grow to encyclopaedic weight.

Altogether, this has been a fulfilling task, at times strenuous, in the eternal search for long-lost material; and at times exciting, as new information came to light. I trust that the constant turning of stones, (only to find more stones underneath) has resulted in a respectful tribute to the achievements of a great airline, and a salute to the people of Eastern Air Lines who worked and rejoiced, made waves, and endured many a tribulation, to make it all happen.

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**M = Map; T = Tabulation;**  
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